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NOT TO BE TAKEN FROM THIS ROOM

A STUDY OF ACHIEVEMENT AND UNDER-ACHIEVEMENT
IN ENGLISH LANGUAGE TEN IN AN ALBERTA
COMPOSITE HIGH SCHOOL

by

Robert Stanley Chapman

DIVISION OF EDUCATIONAL PSYCHOLOGY

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A STUDY OF ACHIEVEMENT AND
UNDER-ACHIEVEMENT IN ENGLISH
LANGUAGE TEN IN AN ALBERTA
COMPOSITE HIGH SCHOOL

A STUDY

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
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OF MASTER OF EDUCATION

FACULTY OF EDUCATION

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SYNOPSIS

This study was an attempt to discover variables which differentiate between achievers and under-achievers in English Language Ten in a large Composite High School.

For each of the 448 Grade 10 students registered in English Language 10 in Strathcona Composite High School in 1956 - 57, an achievement ratio was found by dividing an index of performance in English by an index of mental capacity. The achievers were defined as those 112 students who had the highest achievement ratio and the under-achievers as those 112 students who had the lowest achievement ratio.

The sample of 112 achievers included 82 girls and 30 boys and the sample of 112 under-achievers included 21 girls and 91 boys.

Significant differences were found between the two groups. Achievers, in comparison with the under-achievers, were more often female; younger chronologically; had higher marks in Grade Nine language; failed less often between grades one and nine; were taking an academic course; had better study habits and attitudes; spent less time on out of school hobbies; took more private lessons; came from a professional or semi-professional family; had parents who had slightly more education; and were rated by themselves and a teacher as having a stable personality.

Under-achievers had a previous pattern of failure with lower marks in Grade Nine language, a possible failure between grades one and nine, and poor study habits. They were more often male and older chronologically. The under-achievers were taking an academic, general or shop course (in that order) and spent more time on out of school hobbies. They took few private lessons, came from a non-professional family, and had parents who had slightly less education. The under-achievers felt that they had stable personalities but teacher-raters disagreed in some aspects and described them as rather quiet, rather sensitive, slow to adapt to change and inclined to give up too easily.

No significant differences were found between the two groups in the dimensions of: intelligence, acceleration, amount of time spent on extra-curricular activities, amount of time spent on out of school clubs, language spoken at home, or junior high school attended in Grade Nine.

The author wishes to acknowledge the assistance received from the members of his committee, Mr. Harper and Mr. Pilkington. He is especially grateful for the generous assistance received from the chairman, Dr. R.S. MacArthur.

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I THE PROBLEM

Recent changes in the Alberta curriculum have included more teaching time for English language. The traditional language courses, which were keyed to formal analysis have been replaced by those which stress the functional use of language in social situations. All of this increased change and stress points toward an awareness in Alberta of the importance of language as the core subject.

Despite all of this interest on the part of teachers and departmental officials, there are many students of both low and high intelligence who are not achieving up to their capacities in language. What factors differentiate between the under-achiever and the student who is making the most of his abilities? How can these factors be isolated: (1) as a means of predicting achievement and (2) with a view toward mitigating some of the causes of under-achievement?

The 1953 edition of the Social Studies - Language Curriculum Guide for Grade IX says

Evaluation should be continuous, informal (with perhaps formal check periods at intervals determined by the teachers) and co-operative (with both teacher and student discussing needs, achievement and progress). What students need to know is where their strength and weaknesses lie.¹

This seems to imply the testing of such skills as reading, organizing, writing, listening and speaking. Only the writing and

1. Department of Education, Government of Alberta, Social Studies Language Curriculum Guide for Grade IX, (Queen's Printer, 1953)

organization portions of language were dealt with in this study.

A performance index consisting of standardized tests which cover both mechanics of expression and effectiveness of expression combined with spring examination marks from both an objective-type language examination and an essay-type language examination were used. The skills of reading, listening and speaking which were not being tested directly, certainly are associated skills but -

Ours is a world in which the written word is still the major channel of communication. Ability to use it both in passing on information and in accepting and comprehending information is so fundamental that the measure of a person's efficiency in language and reading skills may also be the measure of his efficiency in his total job performance.¹

In a study of "Promotion Practices and Policies in Alberta Schools" Clarke² found that in the school term 1953-54, 5.4 percent of a total of 80,649 students in grades one to eight in Alberta schools were failed, while only 0.42 percent were accelerated.

Are these failed pupils in grades one to eight the same ones who fail in grade ten? And are the students who are accelerated the extreme achievers in grade ten? Terman and Oden³ found that accelerated students did better in school than students of equal ability who had progressed at the normal rate.

For each of the 448 Grade 10 students registered in English Language 10 in Strathcona Composite High School in 1956-57, an

1. Lavina Engle, "Improving the Reading Skills of Executives", Journal of Educational and Psychological Measurement, Vol. 14, No. 1, Spring 1954, p.207.

2. S.C.T. Clarke, "Promotion Practices and Policies in Alberta Schools", Alberta Journal of Educational Research, No.1, Dec.'55 p 24-34.

3. Paul Witty, editor, The Gifted Child. The American Association for Gifted Children, (Boston: D.C. Health and Company, 1951), p.43.

achievement ratio was found by dividing an index of performance in English by an index of mental capacity. The achievers were defined as those 112 students who had the highest achievement ratio and the under-achievers as those 112 students who had the lowest achievement ratio.

The null hypothesis that there are no differences between the two groups was tested with respect to the following dimensions:

- (1) Personal data
 - (a) Sex
 - (b) Intelligence
 - (c) Chronological age
- (2) Previous school achievement
 - (a) Grade IX language mark
 - (b) Acceleration or retardation
- (3) Interests
 - (a) Pattern of Grade X courses
 - (b) Study habits
 - (c) Participation in extra-curricular activities
 - (d) Out of school clubs
 - (e) Hobbies
 - (f) Private lessons
 - (g) After school jobs
- (4) Background data
 - (a) Language spoken at home
 - (b) Parents' occupation
 - (c) Junior high attended in Grade IX
 - (d) Parents' schooling

(5) Personality Ratings

(a) Self-ratings

(b) Teacher ratings.

A special group, Grade Eleven students who are taking Language 10, are interesting in themselves. Are they taking Language 10 because they failed it previously or because Language 10 and Language 20 were cycled in the smaller high school where they took Grade Ten?

An attempt was made in the study to compare achievers and under-achievers with respect to social and personal characteristics. Would self ratings by the two groups of students be similar? How would Personal Development teachers who were not informed of the individual's success in language rate the achievers and the under-achievers on a scale of personal and social traits?

Society today wants both the under-achiever and the reasons for his under-achievement identified. The hope is that something can be done to help him. If nothing can be done, then the feeling is that he should be removed from the classroom so that he is not wasting his own time, wasting the taxpayers' money and holding back the progress of those who are able to profit from the educational system as it exists today.

But of equal importance to society are the achievers.

The widely ramifying contributions which the very ablest can make are so important that every reasonable effort should be made to identify and assist them.

1

II RELATED LITERATURE

A. Measures of Capacity and Achievement.

The history of the mental measurement movement might be said, with little exaggeration, to be the history of the search for an adequate means of comparing a capacity measure with some measure of achievement.¹

Binet, when he suggested the concept of the M.A. in the early 1900's, was searching for an objective basis for identifying the slow-learning children in the schools of Paris so that they might be segregated from the normal population and given special educational treatment.

Terman popularized the concept of the I.Q. Franzen in 1920 proposed that intelligence test results be compared with achievement test results to give an accomplishment quotient (A. Q.).

This concept has been criticized on a number of grounds:

1. Test validity - The average scores of a composite achievement test (such as the Stanford Achievement Test) correlate almost perfectly with a composite intelligence measure such as the Otis Self-administering Test, when allowance is made for test unreliabilities. But when measures of specific achievement area are compared with the total intelligence measure, correlations vary in magnitude as shown by Table I. The fact must be faced that general intelligence tests are not always valid measuring instruments of capacity in one specific field.

2. Another problem with respect to A. Q. particularly at the Grade Ten level arises in connection with norms. Individuals

1. W. Durost and G. Prescott, An Improved Method of Comparing a Capacity Measure with an Achievement Measure at the Elementary School Level, Educational and Psychological Measurement, Vol.12, No. 4, Winter 1952, p.741.

TABLE I ₁

Correlation Between Pintner General Ability Tests, Intermediate Tests, and Metropolitan Achievement Tests

Pintner Score and	Grade 5	Grade 7
Reading Vocabulary	.717	.696
Reading Comprehension	.760	.761
Arithmetic Fundamentals	.582	.598
Arithmetic Problems	.667	.656
English	.713	.650
Literature	.642	.568
History - Civics	.490	.630
Geography	.634	.573
Spelling	.589	.512
Total	.840	.785
Number of Cases	168	209

1. Ibid., p.742.

do not continue indefinitely to gain in their basic mental capacity any more than they continue to increase in physical height, nor are the increments in gain equal from age to age. The age norm line differs from test to test, depending upon environmental influences and many other factors, and such norm lines should not be equated nor compared.

3. Much school learning is specific to the school situation and without exposure, the child could not be expected to learn. Thus a child with a high intelligence who had not been accelerated might not perform on an achievement test up to the rate predicted by his accomplishment quotient.

4. Curriculum practises of certain schools may result in either more or less achievement in that school than for the average of schools of similar levels of ability.

5. It is only possible to talk about age norms when there is a continuity of instruction with the content at one level being built upon the previously taught and learned content at some specific age level e.g. arithmetic instruction of ten year olds. In a subject such as literature, science or social studies where the instruction from year to year is not necessarily continuous, one cannot assume a steady growth in the achievement function.

6. The above mentioned difficulties plus such things as varying length of school year, varying length of school day, promotion policies with resultant 'pushing on' or 'piling up', etc. make the finding of a satisfactory measure of achievement quotient a difficult task. Durost and Prescott suggest that their Modal Age Group method overcomes or at least faces up to most of these handicaps.

By "modal age" is meant that range of twelve months within a given grade which contains the greatest number or concentration of cases Once the modal age within a grade has been found, the assumption is made that by far the larger part of the pupils falling within this modal year will be those pupils who have entered school at the normal chronological age and have progressed through school at the normal rate of one year in one grade. The next steps involve the establishment of norm lines, not only through the mean scores of successive grades but also the determination of the progression in some measure of variability from grade to grade, presumably the standard deviation. The norm tables read from these norm lines will provide the basis for determining the amount by which an individual deviates from the norm at his particular grade level.¹

The present study in dealing with just one grade level, one subject and one school environment meets the criticism suggested by Durost and Prescott.

Do achievement and capacity tests measure the same thing? Are children with high I. Q.'s always superior in achievement to those of lower I. Q.? Working with a group of tenth grade students, Bond² arrived at a correlation coefficient of .59 between English usage and the Stanford Binet intelligence quotient.

Gavinchuk³ working in Alberta found correlations between California Language Test scores and intelligence test scores ranging from .31 to .48.

Chalmers,⁴ in a study of the effective and recognized vocabularies of Alberta students in Grades VII to XII, discovered a correlation of .63 between intelligence and vocabulary.

1. Ibid. p.750-753

2. A. I. Gates and A. T. Jersild, Educational Psychology, (New York: MacMillan Company, 1950), p.253.

3. M. N. Gavinchuk, "A Study of the Relation of Academic Achievement and Certain Intelligence Tests at the Junior High School Level," (Alberta: An unpublished Master's Thesis, August, 1954), p.44.

4. J.W.Chalmers, "A Study of the Effective and Recognized Vocabularies of Alberta Students in Grades VII to XII," (Alberta: An unpublished Master of Arts Thesis, April, 1935), p.83.

Clark¹ found the coefficient of correlation between scores on the Progressive Language Test Form A and the mental ages on the California Test of Mental Maturity to be .52.

Thus a substantial positive correlation exists in each of these investigations and the relation between intelligence and language achievement does seem significant. So much so that even a student of very high I.Q. who did not have a correspondingly high A. Q. could be labelled as an under achiever.

Another method of comparing achievement and capacity is by means of the Scatter Diagram.

We predict the achievement test score that a person with a given scholastic aptitude test score is most likely to make and use the difference between his actual achievement test score and his predicated achievement test score as an index of over and under achievement.²

In discussing this method, Bowman³ warns that the fact that the pupil is indicated on the diagram as a deviate does not mean that this is his true status. When indicated deviates were screened, types of cases revealed included:

1. Pupils whose school marks are significantly lower than ability and test achievement would indicate.
2. Bright high achievers who are much too old for their grade levels. Such pupils may be tempted to leave school early, particularly if marks are not good.

1. W.W.Clark, Questions and Answers Regarding the Progressive Achievement Tests, (Los Angeles, California Test Bureau, 1950), p.4.
2. D.V.Tiedman and C.C.McArthur, Over and Under Achievement : If Any? 13th Yearbook National Council on Measurements Used in Education, 1956, p.135.
3. H.A.Bowman, Techniques for Graphical Representation of Pupil Personnel Data to Indicate Individual Deviates and to Provide a Basis for More Adequate Guidance, Educational and Psychological Measurement, Vol. 12, No.3 Autumn 1952.

3. Dull low achievers who are much too young for their grade levels. Such a pupil is often out of his depth.

4. Pupils whose courses and interests are not in agreement.

B. What to Include in a Measure of Achievement in Language

What things should be measured in a language achievement test?

Pooley in a criticism of the California Language Tests, says:

What factors mark the growth in language skill? Surely among them are an advance in unity and the power to sustain an idea; an advance in sentence structure featuring increasing subordination; an increase in the power to organize and present materials logically; a growth in diction leading to the use of colorful words in effective places. These factors and what good English teachers teach; it is upon these and similar factors that pupils should be tested.¹

The Hilegas Composition Scale developed in 1912, was one of the few notable early attempts at evaluating written composition.

Despite the fact that language was one of the first school subjects in which experimental measurement in education was undertaken, progress in the development of measuring instruments in this field has not been notable.²

Adequate measuring instruments in language have not been produced in great numbers. Perhaps this has been due to the vagueness with which the objectives have been expressed and the complexity of the skills involved in spoken and written language.

The Co-operative Language Tests are among the most recently developed instruments for the measure of language achievement.

J. Paul Leonard, President of San Francisco State College in his

1. R. C. Pooley, Review of California Language Tests, (New Jersey, Fourth Mental Measurements Yearbook - Gryphon Press, 1953), p.51

2. H. A. Greene, Measurement of General Merit, Encyclopedia of Educational Research, New York, The McMillan Co., 1952, p.393.

review says, "They are chiefly valuable for giving an average comparable level of achievement."¹

Robert C. Pooley, Professor of English at the University of Wisconsin says:

The test, Mechanics of Expression, contains 60 items of grammatical usage placed in sentences, 45 items of punctuation, and 24 items of capitalization, the latter two types presented in running prose. Spelling is presented in 60 items, each in a choice between a misspelled and a correctly spelled word. The test, Effectiveness of Expression, contains three parts. Part I measures sentence structure and style by the comparison of passages of prose placed in parallel columns and by an exercise in the choice among four versions of the same sentence. Part II is a test of active vocabulary in which the student must guess the word intended by definition and by clues to the first letter and length of word. Part III measures organization; by rearranging disorganized paragraphs and by completing a partial outline.

The materials of the tests are well chosen and clearly presented. The directions are simple and concise and make clear to the student the purpose of each test. Dubious and controversial usage has been avoided; so far as is possible in an objective test, the materials of English have been cast into natural settings of sentences and paragraphs. Mechanics are tested functionally rather than in isolation from English expression. It is one of the best tests available in the field of English skills.²

But he also says:

Its principal defect is shared by all other objective tests in English; it does not test ability in English, if ability is defined as the power to use English effectively in speech and writing. It does test the power to correct errors, to proofread, to organize or reorganize material composed by others.³

Chester W. Harris, Associate Professor of Education at the University of Wisconsin answers the latter criticism somewhat.

The materials on punctuation - and those on capitalization as well - present incomplete rather mutilated copy to the student.... The active vocabulary type of diction item which has been criticized by

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1. J. Paul Leonard, Review of Cooperative English Expression Tests, (New Jersey, Third Mental Measurements Yearbook - Gryphon Press, 1949) p.120.
 2. Pooley, Review of Cooperative English Expression Tests, (New Jersey, Third Mental Measurements Yearbook - Gryphon Press, 1949)p.120
 3. Ibid, p.120

several persons has been replaced (on the later forms) by items that require a choice among given words of the most appropriate term to insert into a given sentence.¹

One major validity study is the 1939 study by McCullough and Flanagan in which form OM and the 1937 Form were correlated with several different criteria, one of which was the teacher's estimate of excellence in using oral and written English; the median of the product-moment coefficients of correlation between the tests and teacher's estimates was .53 ²

Despite the good points concerning a single measure of achievement such as the Co-operative Test Battery, Sangster, in weighing the pros and cons of language diagnostic tests and achievements tests, concluded:

Since there are no fields of achievement, as usually defined in the present curriculum, in which all types of achievement are perfectly correlated, the use of a single general achievement test often will hide the fact that in certain types of achievement a pupil has deviated from his own general level.³

As part of the 1954 Survey of Achievement in Language sponsored by the Faculty of Education, University of Alberta, investigators asked each pupil to write a page of original composition upon a given topic.

Such a test should make a useful supplement If language development involves reading, speaking, listening and writing, then other supplementary tests need to be used before a satisfactory evaluation of language ability can be made.⁴

-
1. Chester W. Harris, "Review of Cooperative English Expression Tests," (New Jersey, The Fourth Mental Measurements Yearbook - Gryphon Press, 1953), p.155.
 2. Clark, op cit., p.6
 3. C. H. Sangster, "An Evaluation of the Efficiency of a Standardized Test of Language," (Alberta: An unpublished Master of Education Thesis, August 1956) p.9.
 4. G. R. Conquest, "A Survey of English Language Achievement in Grade Four and Seven in Selected Alberta Schools," (Alberta: An unpublished Master of Education Thesis, August 1954) p.22.

In light of the above statements, the essay portion of the spring Language 10 examination (devised by the English Department of Strathcona Composite High School) was included in the present survey.

Support for inclusion in the study of the objective portion of the spring test (designed to test the material absorbed from the various text books), was given by the conclusion reached by Chalmers in his study of six hundred and three students in Grades IX to XII based on a test designed by the author.

From the nature of the statistical data ... it would appear that a definite relationship between ability to perceive grammatical relationships, on the one hand, and ability in written prose composition on the other hand, has been shown to exist in certain high school grades.¹

Are the Co-operative Language Tests being used by any other surveys today? The University of Missouri puts great store in their Placement Battery consisting of the ACE Psychological Examination and the two Co-operative English Tests - Mechanics of Expression and Effectiveness of Expression. ²

Under the auspices of the Atkinson Charitable Foundation, W. G. Fleming and R. W. B. Jackson of the Department of Educational Research, Ontario College of Education, University of Toronto, are conducting a study of Utilization of Student Resources.

There will be a basic testing program and a supplementary program. The basic program will consist of the Scholastic Aptitude Tests of the College Entrance Examination Board, the School and College Ability Test, The Nelson Denny Reading Test and a questionnaire to be completed by each student giving relevant personal data

1. J. W. Chalmers, "A Study of the Relationship between Ability in Literary and Linguistic Fields," (Alberta, An unpublished Master of Education Thesis, May, 1941), p.71.

2. T. L. Chappell and others, The Differential Prediction of Achievement At The University of Missouri, Educational and Psychological Measurement, No. 14, 1954, p.725.

and indicating his attitudes and intentions with regard to university education. In addition, the staff of each participating school will complete as a joint effort, a questionnaire for each student. In this staff questionnaire the principal and his staff will rate each student on several characteristics considered likely to have a bearing on university success and will give their estimate of his chances of success at university... The supplementary testing program will involve only certain selected schools. In each of these, the following tests will be administered:

The Kuder Preference Record - Personal

The Co-operative English Tests

The Survey of Study Habits and Attitudes (Brown and Holtzman)

And information on the high school record of each student is being obtained... (These) should also provide a means of differentiating the successful from the unsuccessful among the students who enter university and also among those who enter employment directly from high school.¹

C. Factors Affecting Achievement

Early school leaving and low achievement often go hand in hand. The Nova Scotia Department of Education found these symptoms of early school leaving.

- (a) Repeated failures in one or more subjects or grades.
- (b) A consistently low record of achievement.
- (c) Significant retardation in basic courses.
- (d) Frequent absenteeism.
- (e) Lack of participation in extra curricular activities.
- (f) Indications of poor economic conditions at home.
- (g) Indifferent or hostile attitude toward school.
- (h) Behaviour problems requiring frequent disciplinary action.²

What effect does acceleration or retardation have on achievement? Terman was interested in the accelerates, particularly the gifted ones.

-
1. W. G. Fleming and R. W. B. Jackson, Tomorrow's Leaders: A Search For Talent, Canadian Education March 1956, p. 12-13.
 2. Nova Scotia Guidance Newsletter, Nova Scotia Department of Education, Halifax, 1954.

The findings of Terman regarding his gifted group, indicate that accelerates are more likely to be successful and even distinguished in their careers.

In most studies above referred to, accelerates were equated with controls in initial ability, but not in ambition or energy. The person with more drive may more often accelerate and work harder in school and job. Certain other studies have been broad enough or so planned that they somewhat allow for these factors, and still the accelerates did better. Might acceleration in itself have beneficial effects?¹

Many studies have been interested in the effects of bilingualism upon achievement. It was one of the factors in the previously mentioned 1954 Survey of Achievement in Language conducted by the University of Alberta Education Research Committee. In an earlier study, Robinson² measured the effect of a non-English home life upon the written language of twelve hundred and thirty-eight children of Ukrainian parentage in Alberta. They and a control group of children of Anglo-Saxon parents were asked to write a letter on a given topic. The errors in formal grammar and expression were then counted and the number and percentage of each type of error computed. It was found that the children of Ukrainian parents were definitely handicapped in their ability to use the English language.

Reid, also working in Alberta, found evidence of a foreign language handicap.

Both tested intelligence and language achievement mean raw score comparisons place the samples in this order: English, French, Other and Ukrainian. Because of the smallness of

1. Marie A. Flesher and S. L. Pressey, War Time Accelerates, Ten Years After, Journal of Educational Psychology, Number 46, April 1955, p.236.

2. C. H. Robinson, "The Study of Written Language Errors of 1238 Pupils of Ukrainian Origin," University of Alberta, B. Ed. Thesis, 1934.

the three bilingual samples, a safer generalization would be that the monoglot English sample proved significantly superior to the combined bilingual samples in both intelligence and language achievement.¹

Reid also found that Grade VII girls of Alberta demonstrated a highly significant superiority over the boys on the Intermediate form of the California Language Test.² This is not too surprising as girls early show greater facility with speech than do boys and they regularly develop larger vocabularies. Scholastic achievement scores provide plenty of evidence to show that "girls usually excel in oral and silent reading, language usage, spelling and handwriting."³

Dr. Sansom in his statistical survey on behalf of the Alberta Teachers' Association found definite sex differences in language achievement at the Grade X level.⁴

Differing maturation rates are often used to explain these differences noted but even in studies in which boys and girls are matched for intelligence, the girls do relatively better than the boys in language.⁵

What effect do environment and socio-economic status have upon success in language? Watt⁶ divided several thousand children

1. T.S.Reid, "A Survey of the Language Achievement of Alberta School Children in Relation to Bilingualism, Sex and Intelligence," Unpublished U. of A. Master's Thesis, September 1954, p.73

2. Ibid. p.75

3. F.S.Freeman and C.C.Miles, Sex Differences, Encyclopedia of Research, New York, 1952, p.1205.

4. C. Sansom, Sixth Statistical Report Grade X Survey Tests, The A.T.A. Magazine, June 1950, p.28.

5. F.H.Lund Sex Differences in Type of Educational Master. Journal of Education Psychology XXIII, 1932, p.330.

6. A.F.Watt The Language and Mental Development of Children. George G. Harrop and Co. Ltd., London 1944, p.26.

in Birmingham, England, into two groups representing comparatively well-to-do districts and poor districts. He gave vocabulary tests to these two groups and found that at ten years of age the children from well-to-do districts "were able to score an average of fifty per cent more marks" than those from poorer districts, but that this advantage was gradually lost, so that at the age of fourteen the influence of economic background were considerably levelled off. This would seem to indicate that intellectual ability enables children to develop power in the use of language when environmental factors favour such development.

Reid¹ in the Alberta study mentioned previously concluded on this aspect of achievement that the superiority of urban children over rural children was due basically to socio-economic and environmental factors:

Speaking of environmental influences in relation to intellectual development Shepard said:

The environmental milieu in which a child is reared may influence the development of certain skills, abilities, and fields of knowledge which are considered most significant and valuable for those living in that specific geographical or social area. As those abilities are encouraged, certain patterns of behaviour and mental development may be evidenced.²

In a survey to determine educator's opinions about acceleration of gifted students, Wilson³ sent questionnaires to school

1. Reid op.cit. p.76.

2. E.I. Shepard, Measurement of Certain Non-verbal Abilities of Urban and Rural Children. Journal of Educational Psychology XXIII, 1942, p.462.

3. F.T. Wilson, Educators' Opinions About Acceleration of Gifted Students. School and Society, Oct. 1954, p.80 - 120.

administrators and to presidents and heads of departments of teacher-training colleges. One of the topics on which many who replied were concerned, was that of the social and personal development of gifted children.

Engle ₁ administered the Cowan Adolescent Personality Schedule as part of an investigation into personality and social adjustments of high school and university students. He theorized that general intelligence and school marks probably influenced personality and social adjustments but found -

"that the mean personality schedule scores for all accelerated high school subjects was 39.8 and for non-accelerated high school subjects it was 40.4. Corresponding figures for university students were 43.6 and 41.0.

In general it may be said that there is no apparent relationship between personality schedule scores of those entering high school or university younger than the usual age and those entering at the usual age."

Thus previous studies show that achievement is affected by early school leaving; acceleration or retardation; sex difference; foreign language and other environmental factors; socio-economic status; and social and personal adjustment.

1. T. L. Engle, A Study of the Effects of School Acceleration Upon the Personality and Social Adjustments of High School and University Students, Journal of Educational Psychology, 29:537, October 1938

III THE EXPERIMENTAL PROCEDURE

(a) Finding Achievement Ratio

In order to find the achievement ratio of the Language 10 students attending Strathcona Composite High School, Edmonton, it was necessary to find each student's -

i Capacity index

ii Performance index

i. The capacity index was Mental Age as computed from the General Test administered on a province-wide basis as one of the compulsory Grade Nine final examinations administered June, 1956. This was the Dominion Group Test of Learning Capacity - Intermediate - 1950 Edition - Form A - Alberta Edition. The General Test raw scores for 431 Grade Ten students in attendance May 1, 1957 at Strathcona Composite High School, were listed from the Department of Education Examination Branch records. Mental ages were computed by the method described in the "Guide to the Interpretation of the Grade IX General Test - Administered June 1956". Twenty Grade X students (through illness, a move into the province, etc.) had not written this General Test. As part of the school guidance program, seventeen of these students in October, 1956 had completed the Otis Group Test of Mental Ability (Form X) and the computed M.A. from this test was used. Three of the students who had not written the General Test, also did not write the Otis Test, and were not included in the sample.

The 17 Grade XI students taking Language 10 fell into two groups (1) those who were repeating because they had failed it or wished to raise a low mark and (2) those who had attended a very small high school in Grade X where Language 10 and 20 were taught in a two year cycle, and thus had not had an opportunity to take Language 10 previously. The M.A. as computed from the General Test in their Grade IX year was used for all Grade XI students. These Grade XI students were not included in the sample but were discussed separately.

The remaining 448 students constituted the final sample.

ii Performance index - In light of the previous research done in this field (referred to in "Related Literature"), it was felt that the measure of performance should be composed of measure of both mechanics of English language and effectiveness of expression of English language. Standardized tests, teacher-devised course content tests and samples of written expression were used.

Mechanics of language was measured by the Co-operative English Test A - Mechanics of Expression - Form X and by the Strathcona Composite High School Spring Language 10 examination. The latter test, a multiple choice objective type, was devised jointly by the six language 10 teachers of Strathcona Composite High School, to test the coverage of the course content from September 4, 1956 to May 1, 1957. In a split-halves study, a reliability coefficient of .67 was found. The T scores ranged from 19 to 79 with a mean of 49.57 and a standard deviation of 10.7

Effectiveness of expression was measured by the Co-operative English Test B 1 - Effectiveness of Expression - Form X and by a

teacher marked essay written at the same time as the Spring Language 10 examination. The key used to mark this essay is shown in table II.

Each teacher originally marked only the essays of his own class except for teacher A who also marked the 34 essays in the one Language 10 class of teacher E.

Teacher	A	-	4	classes
"	B	-	4	classes
"	C	-	3	classes
"	D	-	1	class
"	E	-	1	class

Later teacher A marked one set of essays (one class) originally marked by teacher B and a correlation in marks of .73 was found. Teacher A marked one set of essays originally marked by teacher C and a correlation in marks of .54₁ was found. The essay raw scores ranged from 10 to 47 out of a possible 50. The mean was 29.5 and the standard deviation was 6.9.

Objective test scores and the essay scores were transmuted into T scores, (with a mean of 50 and a standard deviation of 10). By means of the tables provided by the publishers, the Co-operative tests were changed into scaled scores, (with a mean of 50 and a standard deviation of 10). To give equal weighting to all four measures, these four standardized scores were added to give the individual student's performance index.

This performance index was then divided by the capacity index (mental age expressed in months) to give his achievement ratio. It should be noted that this was not a measure of intellectual capacity, but rather a ratio of performance in English to mental

1. It should be noted that this correlation is low and it tends to weaken the reliability of the essay marks as one of the measures of effectiveness of expression.

TABLE II

MARKING KEY FOR ESSAY PORTION OF
STRATHCONA COMPOSITE HIGH SCHOOL
SPRING LANGUAGE TEN EXAMINATION

Composition

Part A

Deduct from 25 (2 per error)

Errors in spelling, punctuation, grammar, sentence
construction, form.

Part B

	Possible Mark	St. Mark
1. Basic mark from Part A	25	
2. Material	5	
3. Organization of Material	10	
4. Diction	5	
5. Total impression	5	

Total

50

capacity for each student i.e. some students of high intelligence fell into the lowest quartile of achievement and conversely some students of low intelligence were included in the highest quartile of achievement.

The students who fell into the upper quartile of the resultant achievement ratio scale were classed as those who were achieving near or up to their capacities and are called "the achievers" in the remainder of this study.

The students who fell into the lowest quartile of the achievement ratio scale were not achieving as high as their capacity measure suggested they might and these people are referred to in the remainder of the study as "the under-achievers".

(b) Dimensions of the study

In addition to writing the four previously mentioned tests (used to determine achievement ratio), all 468 Language 10 students were required to fill out (1) a Brown and Holtzman Survey of Study Habits and Attitudes and (2) a questionnaire (including a personality and temperament self-rating scale) devised by the investigator. All students were asked to fill out the various forms to facilitate administration and to nullify the effect of "picking out" particular students. These forms were administered to Grade 10's during the Personal Development periods by the subject teacher and to the Grade 11's individually by the investigator. It was planned, originally, to use the Kerr-RemersTM American Home Scale as a measure of socio-economic status but when this was not available, the junior high school attended in Grade IX was taken as this measure, along with language spoken at home, parents' occupation and education.

The junior high schools drew their students from relatively homogenous areas and the inhabitants of each area would fall roughly into the same socio-economic grouping. Information from the individual cumulative records was also used.

Questions 1 to 12 in the questionnaire (which follows) amplified by the information from the cumulative records, was designed to compare the two samples under four broad categories:

(1) Personal data

- (a) Sex
- (b) Intelligence
- (c) Chronological age.

(2) Previous school achievement

- (a) Grade IX language mark
- (b) Acceleration or retardation

(3) Interests

- (a) Pattern of Grade X courses
- (b) Study habits
- (c) Participation in extra-curricular activities
- (d) Out of school clubs
- (e) Hobbies
- (f) Private lessons
- (g) After School Jobs

(4) Background data

- (a) Language spoken at home
- (b) Junior high attended in Grade IX
- (c) Parents' occupation
- (d) Parents' schooling

Question 13 to 20 was designed to cover the area of:

(5) Personality

- (a) Self-ratings.

Before these questionnaires were administered, the six Personal Development teachers concerned met and discussed the purposes of the study, the manner of administering the forms and possible interpretation of the various questions. They were instructed to help

FORM 1. - STUDENT QUESTIONNAIRE

All answers to this questionnaire will be treated confidentially. Please consider each question carefully and answer it as fully as you are able.

Name _____ Home Room No. _____
(Surname) (Given Names)

Birthdate: Day _____ Month _____ Year _____

1. Encircle the name of the type of course that you are taking this year:

Academic Commercial Shop General

2. (a) Check at the left, those extra-curricular activities in which you have taken an active part during senior high school. (Include out of class activities only.)

(b) After the name of the extra curricular activity, write in the approximate number of minutes you spent on it per week when you were actively engaged in it. e.g. 30 min., 45 min., 60 min., etc.

(c) After the name of the extra-curricular activity, write in the name of any official position which you held. e.g. secretary, leader, etc.

Min. per week Offices held if any

Athletics _____

Musical _____

Debating _____

Religion _____

Journalism _____

Dramatics _____

Art _____

Hobby Group _____

Student Government _____

Others, Namely - _____

3. Have you belonged to any clubs or organizations outside of school during senior high school?

Yes No

List their names below Min. per week Offices held if any

Do you have a hobby?

Yes No

What is it? _____ Minutes per week? _____

Do you have an after school job or a week end job?

Yes No

What is it? _____ Minutes per week? _____

If you do not have an after school job now, would you like one if you could get one?

Yes No

Do you take any private lessons outside of school?

Yes No

In what? _____

Minutes per week occupied with lessons and practising? _____

If you ever use a language other than English when speaking to your Father or your Mother, name it here. _____

Encircle the phrase which tells how much you use the language at home.

Seldom

Half of the time

Most of the time

What are your parents' occupations? (Be specific e.g. owner of a hardware store: clerk in a hardware store.)

Father _____

Mother _____

Check the highest level of schooling attained by each of your parents.

Father Mother

_____ Did not attend school

_____ Public school (elementary or junior high).

_____ Some high school.

_____ Graduated from high school.

_____ Some training beyond high school graduation.

_____ University degree.

Have you ever repeated a grade?

Yes No

Which grade? _____

Have you ever skipped a grade?

Yes No

Which grade? _____

the following questions, encircle the phrase which you think best describes you.

Are you quiet or talkative?

Talk very little	Rather quiet	A rather good conversationalist	A good conversationalist	Talk too much
------------------	--------------	---------------------------------	--------------------------	---------------

Are you sensitive to criticism?

Very sensitive	Rather sensitive	Can accept mild criticism	Can accept considerable criticism	Can accept All criticism
----------------	------------------	---------------------------	-----------------------------------	--------------------------

How flexible are you?

Too easily persuaded; unstable	Always ready to experiment	Moderately adaptable	Slow to adapt to changes	Stubborn unwilling to experiment
--------------------------------	----------------------------	----------------------	--------------------------	----------------------------------

How persistent are you?

Discouraged at least obstacle	Give up too easily	Average	Persistent	Extremely persistent
-------------------------------	--------------------	---------	------------	----------------------

Are you shy or confident in social relationships?

Painfully self-conscious	Timid, often embarrassed	Sometimes self-conscious	Confident	Very Confident
--------------------------	--------------------------	--------------------------	-----------	----------------

What are you like emotionally?

Always very calm	Usually calm and objective	Neutral	Controlled largely by emotion	Very excitable high strung
------------------	----------------------------	---------	-------------------------------	----------------------------

Do you worry frequently?

Worry constantly	Worry quite often	Sometimes anxious	Rather easy-going	Extremely carefree
------------------	-------------------	-------------------	-------------------	--------------------

Do you find it easy to make friends?

Avoid meeting people	Indifferent about new friends	Friendly	Enjoy being with people	A very good mixer.
----------------------	-------------------------------	----------	-------------------------	--------------------

the students with unfamiliar words and to give any help in interpretation necessary but to have each student proceed with the actual answering of the questions himself.

These same six teachers were asked to fill out a rating scale similar to Questions 13 to 20 on the student-answered questionnaire for selected students in their Personal Development classes. These were the students who fell into either the achiever or under-achiever category. The students were not identified as achievers or under-achievers to the teacher-raters.

The teachers of Personal Development were chosen rather than those of some other subject as it was felt that the greatest rapport and understanding was built up in this subject between teacher and student. This rapport and understanding stemmed from the nature of the subject and from the type of person who was chosen to teach this subject. (Two of the six were school counselors and the other four were also experienced in working with young people.) Rapport was particularly important in administration of the Brown Holtzman Survey of Study Habits and Attitudes.

The rating scale was adapted from that used by Beaton ¹ who in turn used the personality rating scale devised by Terman ² in his later studies of the development of gifted children.

1. M. A. Beaton, "The Effects of Acceleration on the Academic progress and on the Personal and Social Development of Calgary and Edmonton Grade 10 Students", (An unpublished Master of Arts Thesis).

2. Terman, Genetic Studies of Genius, 1926, Stanford.

FORM 2 TEACHERS' RATING SCALE
OF PERSONALITY

Name _____

the following questions, encircle the phrase which you think best describes the student named above.

Is he or she quiet or talkative?

Talks very little	Rather quiet	A rather good conversationalist	A good conversationalist	Talks too much
-------------------	--------------	---------------------------------	--------------------------	----------------

Is he or she sensitive to criticism?

Very sensitive	Rather sensitive	Can Accept mild criticism	Can accept considerable criticism	Can accept All criticism
----------------	------------------	---------------------------	-----------------------------------	--------------------------

How flexible is he or she?

Too easily persuaded; unstable	Always ready to experiment	Moderately adaptable	Slow to adapt to changes	Stubborn, unwilling to experiment
--------------------------------	----------------------------	----------------------	--------------------------	-----------------------------------

How persistent is he or she?

Discouraged at least obstacle	Gives up too easily	Average	Persistent	Extremely persistent
-------------------------------	---------------------	---------	------------	----------------------

Is he or she shy or confident in social relationships?

Painfully self-conscious	Timid often embarrassed	Sometimes self-conscious	Confident	Very confident
--------------------------	-------------------------	--------------------------	-----------	----------------

What is he or she like emotionally?

Always very calm	Usually calm and objective	Neutral	Controlled largely by emotion	Very excitable, high strung
------------------	----------------------------	---------	-------------------------------	-----------------------------

Does he or she worry frequently?

Worries constantly	Worries quite often	Sometimes anxious	Rather easy-going	Extremely carefree
--------------------	---------------------	-------------------	-------------------	--------------------

Does he or she find it easy to make friends?

Avoids meeting people	Indifferent about new friends	Friendly	Enjoys being with people	A very good mixer
-----------------------	-------------------------------	----------	--------------------------	-------------------

IV THE COMPOSITION OF THE ACHIEVER AND UNDER-ACHIEVER GROUPS

(a) Sex

Table III shows the number of students attending S.C.H.S. in Grade 10 at September 4, 1956 and May 1, 1957. Although only 29 pupils appear to have stopped attending school during this period, the number was actually 46 (28 girls and 18 boys).

Pupils coming into the school from other schools account for the difference in totals. The final sample of 448 was composed of 197 girls (44%) and 251 boys (56%). There were 82 girls (73%) and 30 boys (27%) included among the 112 achievers. The under-achiever group of 112 was made up of 21 girls (19%) and 91 boys (81%).

The standard error of the percentage of female achievers was:

$$\sqrt{\frac{p \cdot q}{N}}$$

$$= \sqrt{\frac{.732 \times .268}{112}} = 4.2\%$$

thus we would expect at the .01 confidence level that the achiever groups would be between 62% and 84 % female.

The standard error of the percentage of female under-achievers was 3.7% and we would expect at the .01 confidence level that the female under-achiever group would be between 9 % and 29% of all the under-achievers.

Setting up the null hypothesis that no true difference exists as between the percentage of girls in the two groups, it is found that:

TABLE III

DISTRIBUTION OF GRADE 10 LANGUAGE 10 STUDENTS AT
BEGINNING AND END OF YEAR _____ BY ACHIEVER AND
AND UNDER-ACHIEVER GROUPS.

	Number at Sept. 4, 1956	Number at May 1, 1957	Excluded (One or More Forms Miss- ing)	Final May 1 Population	Achievers	Under Achie- vers
Girls	222	199	2	197	82	21
Boys	258	252	1	251	30	91
Total	480	451	3	448	112	112

where P = percentage occurrence

$$Q = 1 - P$$

N = size of sample

$$P = \frac{N_1 P_1 + N_2 P_2}{N_1 + N_2} = \frac{112 \times 73 + 112 \times 19}{112 + 112} = 46\%$$

$$Q = 1 - P = 54\%$$

$$\begin{aligned} \sigma_{P_1 - P_2} &= \sqrt{PQ \left(\frac{1}{N_1} + \frac{1}{N_2} \right)} \\ &= \sqrt{46 \times 54 \left(\frac{1}{112} + \frac{1}{112} \right)} = 6.6\% \end{aligned}$$

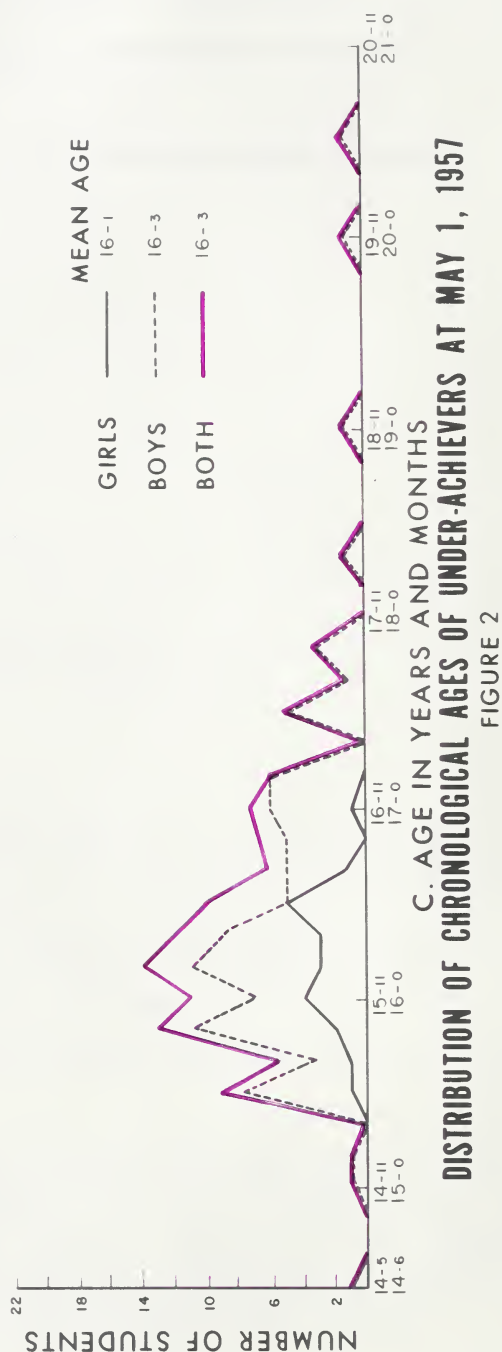
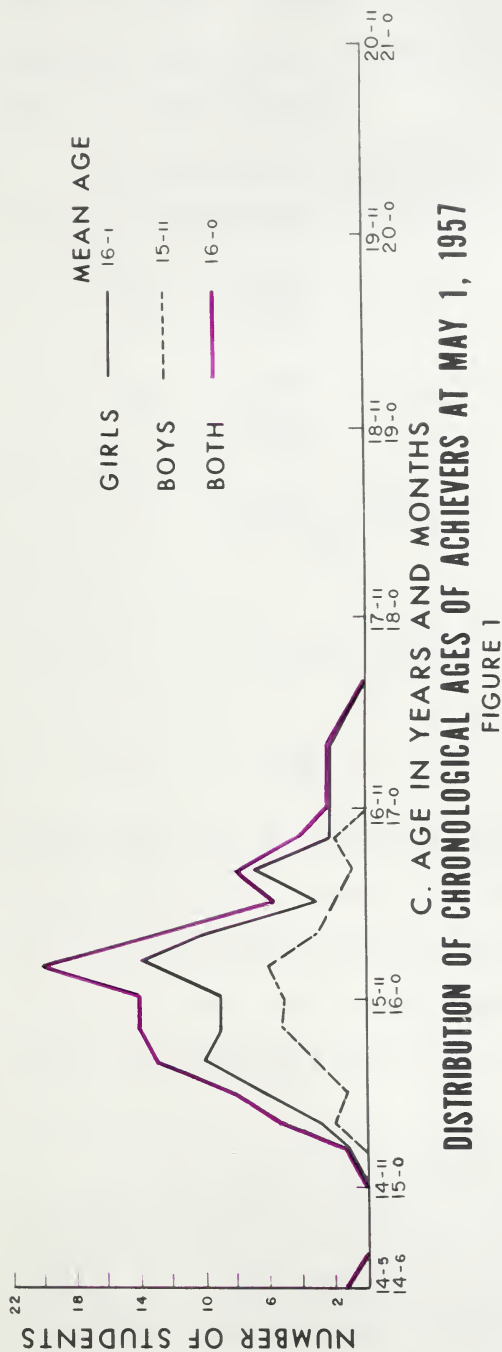
$$CR = \frac{(P_1 - P_2) - 0}{\sigma_{P_1 - P_2}} = \frac{54}{6.6} = 8.2$$

In table D₁, the critical ratio exceeds 2.60 (222 df) and we can be confident at the .01 level that the preponderance of girls in the achiever group is significant.

(b) Chronological Age

Figures 1 and 2 show the chronological age composition of the two groups. The 82 girls in the achiever group and the 21 girls in the under-achiever group both had a mean age of 16 years - 1 month. The mean of the 91 under-achiever boys was 16 years, 3 months, four months older than the mean of the 30 achiever boys

1. H. E. Garrett, Statistics in Psychology and Education, (New York: Longman's Green and Company, 1953), p.427.



(15 years, 11 months). The mean age of all of the achievers was 16 years 0 months (S.D. of 5.4 months) - three months younger than the 16 years 3 months mean of the under-achievers (S.D. of 10.8 months).

Setting up the null hypothesis that the difference in means is not significant, we find that:

$$\sigma_{M_1} = \frac{5.4}{\sqrt{112}} = .51$$

$$\sigma_{M_2} = \frac{10.8}{\sqrt{112}} = 1.02$$

$$\begin{aligned}\sigma_D &= \sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2} \\ &= \sqrt{.51^2 + 1.02^2} = \sqrt{1.30} = 1.14\end{aligned}$$

$$CR = \frac{3.00}{1.14} = 2.63$$

From table A₁ we find that 99% of the cases in a normal distribution would fall between the true mean and $\pm 2.63\sigma_D$ and a difference of 3.00 or larger would occur only 1 time in 100 comparisons. We can reject the null hypothesis and be confident at the .01 level that the achievers are significantly younger than the under-achievers.

At the end of the Spring term, a compilation was made by the school guidance officers of the students reported as indolent by one or more teachers. The results are worthy of note in this study. In Grade 10 there were 15 who had been reported indolent by one teacher (that is in one subject), 9 reported by two teachers and 3 reported by three or more. All of these 27 students' names are included among the list of under-achievers' names found in this study.

1. Garrett, op.cit. p.424.

But this apparent significant difference in mean ages might have been due only to significant differences in standard deviations. Using the F test to test this:

$$F = \frac{S. D._1^2}{S. D._2^2}$$

$$= \frac{10.8^2}{5.4^2} = 4.00$$

d.f. are 111 and 111.

This F was significant at the .02 level. Since there was a significant difference in standard deviations, the Cochran and Cox method was used to test the significance of difference of means.

$$\text{Criterion } t = \frac{t \frac{SE_{M_1}^2}{.01} + t \frac{SE_{M_2}^2}{.01}}{\frac{SE_{M_1}^2}{.01} + \frac{SE_{M_2}^2}{.01}}$$

$$= \frac{2.62 \times .51^2 + 2.62 \times 1.02^2}{.51^2 + 1.02^2}$$

$$= 2.61$$

The observed C.R. of 2.63 is greater than this criterion ¹t of 2.61 and we can confirm that at the .01 level of confidence achievers are significantly younger than under-achievers.

The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation

$$f(x) = \frac{1}{x} \int_0^x f(t) dt$$

$$f(x) = \frac{1}{x} \int_0^x f(t) dt$$

and the second part is devoted to the study of the function $f(x)$ defined by the equation

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$$f(x) = \frac{1}{x} \int_0^x f(t) dt$$

The third part of the paper is devoted to the study of the function $f(x)$ defined by the equation

The fourth part of the paper is devoted to the study of the function $f(x)$ defined by the equation

The fifth part of the paper is devoted to the study of the function $f(x)$ defined by the equation

(c) Intelligence

The intelligence in terms of mental age, of the achievers is shown in Figures 3 in years and months. The girls ranged from 11 - 8 to 20 - 2 with a mean of 16 - 1 and a standard deviation of 21.1 months. The boys ranged from 13 - 11 to 19 - 2 with a mean of 15 - 9 and a standard deviation of 17.8 months. The mean mental age of the combined group was 15 years - 11 months (S.D. of 19.4 months).

The under-achievers are grouped by intelligence in terms of mental age in Figure 4. The girls ranged from 13 - 1 to 16 - 9 with a mean of 15 - 5 and a standard deviation of 13.6 months. The boys also ranged from 13 - 1 to 19 - 2. Their mean was 15 - 8 and the standard deviation was 16.5 months. The mean mental age of the combined under-achiever group was 15 years 7 months. (S.D. of 15 - 0 months).

A list was compiled by the school guidance officials at the beginning of the school year, to show those students who, by reason of their high intelligence, were potentially outstanding students.

I.Q.

Number of students

140	5
130 - 140	21
120 - 130	57

Three of the students in the 120 - 130 I.Q. group had stopped attending S.C.H.S. by May 1, 1957. The remaining potentially outstanding students fell into the achiever and under-achiever groups as follows:

I.Q.	Achievers	Under-Achievers	In 2nd or 3rd Quartile of Achievement
140	2	2	1
130 - 140	7	4	10
120 - 130	13	11	30
Totals	22	17	41

Thus of the 80 potentially outstanding students, 22 or 28% proved to be outstanding, 41 or 51% were neither achievers nor under-achievers and 17 or 21% did not live up to their potential to the extent that they were classed as under-achievers.

MEAN M.A.

GIRLS — 16-1
BOYS - - - 15-9
BOTH — 15-11



DISTRIBUTION OF MENTAL-AGES OF ACHIEVERS

FIGURE 3

MEAN M.A.

GIRLS — 15-5
BOYS - - - 15-8
BOTH — 15-7



DISTRIBUTION OF MENTAL AGES OF UNDER - ACHIEVERS

FIGURE 4

Setting up the null hypothesis that the difference in means between the achiever and the under-achiever is not significant, we find that:

$$\sigma_{M_1} = \frac{19.4}{\sqrt{112}} = 1.83$$

$$\sigma_{M_2} = \frac{15.0}{\sqrt{112}} = 1.41$$

$$\begin{aligned}\sigma_D &= \sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2} \\ &= \sqrt{1.83^2 + 1.41^2} = \sqrt{5.32} = 2.31\end{aligned}$$

$$CR = \frac{4.00}{2.31} = 1.7$$

From table A₁ we find that 92% of the cases in a normal distribution would fall between the true mean and $\pm 1.7\sigma_D$ and a difference of 2.31 or larger would occur 8 times in 100 comparisons. The null hypothesis must be retained as this does not reach even the .05 level of confidence and we cannot be confident that the difference in mean mental age is significant.

1. Garrett, op.cit. p. 424.

V PREVIOUS SCHOOL ACHIEVEMENT

(a) Grade IX Language Departmental Examination

Were the Grade IX Language test marks any indication of achievement or lack of achievement in Grade X Language? Table IV shows that 77 of the 112 achievers received a mark of H or A on the Grade IX examination. The two who received a mark of D and the six who received a mark of C in Grade IX did not have very high performance indices in Grade X but their low intelligence put them in the achiever category.

Forty-two or 37% of the under-achievers received marks of H or A in Grade IX but did not live up to their performance when they reached Grade X. Fifty-five or 49% received D or C in Grade IX and did not improve in Grade X.

Setting up the hypothesis that no true difference exists as between the percentages which attained H or A in Grade IX Language in the two groups, it is found that:

$$\begin{aligned}
 P &= \frac{N_1 P_1 + N_2 P_2}{N_1 + N_2} \\
 &= \frac{112 \times 69 + 112 \times 37}{112 + 112} = 53\%
 \end{aligned}$$

$$Q = 1 - p = 47\%$$

$$\sigma_{P_1 - P_2} = \sqrt{PQ \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}$$

TABLE IV

MARKS ON GRADE NINE LANGUAGE DEPARTMENT
OF EDUCATION EXAMINATION - JUNE 1956

MARK	ACHIEVERS	UNDER- ACHIEVERS
H	28	15
A	49	27
B	27	15
C	6	19
D	2	36

$$= \sqrt{53 \times 47 \left(\frac{1}{112} + \frac{1}{112} \right)} = 6.6\%$$

$$\begin{aligned} CR &= \frac{(P_1 - P_2) - 0}{\sigma_{P_1 - P_2}} \\ &= \frac{32}{6.6} = 4.9 \end{aligned}$$

In table D¹, the critical ratio exceeds 2.6 (222 df) and we can be confident at the .01 level that occurrence of a mark of H or A is to be expected more commonly in the achiever group.

(b) Acceleration or Retardation

Does acceleration or retardation have an effect upon achievement in Language 10?

i. Retardation - Table V shows the effects of retardation. Five girls and two boys who later became achievers failed one grade. All of the five girls failures were in the first five grades, while the two boys failed in the upper public school grades. Only seven of the 112 achievers or 6.2% had ever failed. The standard error of this percentage is:

$$\sigma_p = \sqrt{\frac{pq}{N}}$$

$$\sigma_p = \sqrt{\frac{.062 \times .938}{112}} = 2.2\%$$

We can be confident at the .01 level that the "true" percentage of

1. op. cit. p.427

TABLE V

RETARDATION - FROM GRADES ONE TO NINE

	ACHIEVERS			UNDER-ACHIEVERS		
GRADE	GIRLS	BOYS	BOTH	GIRLS	BOYS	BOTH
1	1	0	1	0	2	2
2	1	0	1	1	7	8
3	2	0	2	2	6	8
4	0	0	0	3	1	4
5	1	0	1	0	2	2
6	0	1	1	0	5	5
7	0	0	0	0	3	3
8	0	1	1	0	2	2
9	0	0	0	1	3	4
TOTAL	5	2	7	7	31	38

students from the highest quartile of achievement in Language 10 who had failed previously will be between 0.4% and 12%. It would appear that failure is uncommon in this achiever group and that the few girls who did fail were able to overcome this poor start.

Seven girls and 31 boys had failed at least once in the under-achievement group of 112 students. Thus 38 students or 34% of the whole group had failed. The standard error of this percentage is .045 or 4.5%. We can be confident at the .01 level that the "true" percentage of students from the lowest quartile of achievement in Language 10 who had failed previously will be between 22.4% and 45.6%. Six of the girls or nearly all of those who had failed, did so in the lower five grades. While 16 of the boys failed in these grades, 13 of the boys were failures in the upper grades. Five of the group had failed more than once.

As 34.0% is significantly greater than 6.2% we can be confident at the .01 level that failure is much more common in the under-achiever group. It would appear that once they have begun to fail, the pattern of poor achievement may follow them up to Grade Ten.

Why should more boys fail than girls? An answer cannot be given in such a limited study as the present one but perhaps the oft suggested reasons given in related literature - early maturation of girls; effect upon teachers of the quietness and docility of girls as opposed to traditional loudness and high spirits of boys, etc., may be among the causes.

ii Acceleration - Table VI lists the grades skipped or taken two in one year. Five girl and five boy achievers were accelerated -

TABLE VI
ACCELERATION - FROM GRADES ONE TO NINE

	ACHIEVERS			UNDER-ACHIEVERS		
GRADE	GIRLS	BOYS	BOTH	GIRLS	BOYS	BOTH
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	2	1	3	0	2	2
4	1	0	1	1	0	1
5	0	0	0	0	1	1
6	0	0	0	0	0	0
7	0	2	2	0	0	0
8	2	1	3	0	0	0
9	0	1	1	0	0	0
TOTAL	5	5	10	1	3	4

3 of the girls in the lower grades and 4 of the boys in the upper grades. A total of 10 achievers accelerated or only 9% would seem to indicate that there is less acceleration than retardation as Dr. Clarke¹ suggests and/or that many accelerates fall in the middle two quartiles of achievement so that the acceleration puts them in a group where they no longer excel so outstandingly.

Only 1 girl under-achiever and 3 boy under-achievers or 3% of the 112 were accelerated. It would seem that a mistake had not been made very often, if at all in accelerating students who later were unable to "keep up" and became under-achievers.

Too few students of either group had been accelerated to show any significant difference between the two groups.

(c) Grade Eleven Students in Language 10

There were 17 Grade Eleven students taking Language 10. 13 of these (3 girls, 10 boys) were repeating the grade because they had failed it. One girl was repeating the class to get a higher mark than a C and 4 (all boys) had not taken Language 10 before as they had attended a very small high school where Language 10 and 20 are taught to combined Grade 10 and 11 classes on a two year cycle.

Three of the 4 who had not taken Language 10 before had a high enough achievement ratio to have fallen in the upper quartile

1. S.C.T. Clarke, Promotion Practises and Policies in Alberta Schools, Alberta Journal of Educational Research, December, 1955 p. 24-34.

or achiever group but they were not included because it was felt that their extra year of high school experience disturbed the homogeneity of the sample.

Four of the 13 Grade XI Language 10 repeaters had a low enough achievement ratio to have been included among the under-achievers. But this sub-group too, were excluded on the grounds of experience.

The pattern of retardation and acceleration of the Grade XI's is shown in table VII. As there were so relatively few Grade XI's, they were not considered further in the study.

TABLE VII

ACCELERATION AND RETARDATION OF GRADE ELEVEN
STUDENTS REGISTERED IN LANGUAGE TEN

	RETARDATION				ACCELERATION			
GRADE	REPEATERS		CYCLED		REPEATERS		CYCLED	
	G	B	G	B	G	B	G	B
1		1						
2						1		
3		1						1
4		1						
5								
6								
7								
8								1
9								
TOTAL	0	3	0	0	0	1	0	2

VI INTERESTS

(a) Pattern of Grade Ten Courses

As Strathcona is a Composite High School, it was possible for the student to choose any of the patterns made possible by the choice of subjects available in the Alberta High School Curriculum. An Academic course would be that which provided prerequisites for the Grade XII subjects required for entrance to the University of Alberta by the University Matriculation Board. All of the four patterns included the compulsory subjects of Literature 10, Language 10, Social Studies 10, Physical Education 10, and Health and Personal Development. In the commercial pattern, the student would choose typing, shorthand, book-keeping, etc. as his options. In the shop-course, the boys would choose wood-working, electricity, automotives, etc. and the girls would choose fabrics and dressmaking, and foods and nutrition. So few students were taking all fine arts options, that they were included with those who were taking a mixture of options in a grouping referred to as "general".

Table VIII shows that 80 of the achievers (71.4% of them) were taking the academic pattern and 26 girls were taking the commercial pattern, while none were taking the shop pattern and only 6 were taking the general pattern. The preponderance of achievers in the academic pattern is an excellent thing for this field: the lack of any achiever among people taking the shop courses is cause for attention. There are students registered in these courses, thus

it is indicated that the middle group and the potential failures find their way to this pattern.

Setting up the null hypothesis that the percentage of achievers taking an academic pattern (71.4%) is not significantly greater than the number of under-achievers taking an academic pattern (52.7%), it is found that:

$$P = \frac{N_1 p_1 + N_2 p_2}{N_1 + N_2}$$

$$= \frac{112 \times 71.4 + 112 \times 52.7}{112 + 112} = 62.1\%$$

$$Q = 1 - P = 37.9\%$$

$$\sigma_{P_1 - P_2} = \sqrt{PQ \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}$$

$$= \sqrt{62.1 \times 37.9 \left(\frac{1}{112} + \frac{1}{112} \right)} = 6.5\%$$

$$CR = \frac{(P_1 - P_2) - 0}{\sigma_{P_1 - P_2}} = 2.80$$

In table D¹, this critical ratio exceeds 2.60 (222 df) and we can be confident at the .01 level that the number taking an academic pattern is significantly greater in the achiever group than in the under-achiever group.

Might some of the 59 under-achievers (shown by Table IX) who were taking an academic pattern be achievers if they were taking

TABLE VIII
PATTERN OF COURSES OF ACHIEVERS.

	ACADEMIC	COMMERCIAL	SHOP	GENERAL	TOTAL
GIRLS	52	26	0	4	82
BOYS	28	0	0	2	30
TOTAL	80	26	0	6	112

TABLE IX
PATTERN OF COURSES OF UNDER-ACHIEVERS.

	ACADEMIC	COMMERCIAL	SHOP	GENERAL	TOTAL
GIRLS	9	10	0	2	21
BOYS	50	5	6	30	91
TOTAL	59	15	6	32	112

some other course? Hohol¹ gave maladjustment of curriculum and methods of instruction to the abilities, needs and interests of the individual pupil, as one of the prime causes of school drop-outs. The number of under-achievers (59 - academic and 38 - general and shop) in the academic and general patterns would serve to bear out his thesis.

(b) Study Habits and Attitudes

The Brown-Holtzman Survey of Study Habits and Attitudes was used to assess the study habits of the achiever and under-achiever groups. The reliability coefficients given by the authors were computed by correlating odd with even items for a sample of 339 high school boys and 303 high school girls. They were .83 for boys and .80 for girls. To test the Survey's ability to measure traits which play an important role in academic success but which are not assessed by a scholastic aptitude test, S.S.H.A. scores were correlated with A.C.E. Psychological Examination scores for a large high school population. In two large high schools the correlations were as low as .10 and .20.

It may be concluded that with high school population as well as with college population the S.S.H.A. measures traits which play an important role in academic success and which are not assessed by a scholastic aptitude test. In practical terms, these statistics indicate the advisability of securing S.S.H.A. scores along with measures of scholastic aptitude. In the evaluation of a student's academic potential, the S.S.H.A. contributes significantly to the information which may already be on hand.²

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1. A. E. Hohol, Factors Associated with School Drop-outs, The Alberta Journal of Educational Research, March 1955, p.9
 2. W. F. Brown and W. H. Holtzman, Survey of Study Habits and Attitudes Manual, The Psychological Corporation, New York, 1956, p.10.

Table X indicates that the achievers had a mean raw score of 28.12 with a S.D. of 11.30 on the S.S.H.A. while the under-achievers had a mean raw score of 22.80 with a S.D. of 10.55

The standard error of the mean of the achievers was 1.07 and the S.E. of the mean of the under-achievers was 1.00. The standard error of the difference between the two means was

$$\begin{aligned} \sigma_D &= \sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2} \\ &= \sqrt{1.07^2 + 1.00^2} \\ &= 1.46 \end{aligned}$$

The actual difference in the means was 5.32

$$t = \frac{D}{\sigma_D} = \frac{5.32}{1.46} = 3.64$$

Entering Table D¹ with 222 df, it is found that t of 3.64 exceeds 2.58 and we may conclude at the .01 level that the achievers had significantly better study habits and attitudes than the under-achievers. (The difference in S.D.'s was not significant)

(c) Participation in Extra-Curricular Activities

A large and extensive system of extra-curricular activities was available to the students in this school. Did the achievers take advantage of this organized relaxation and profit from it?

1. Garrett, op.cit. p. 427.

TABLE X

DISTRIBUTION OF RAW SCORES - BROWN AND HOLTZMAN
SURVEY OF STUDY HABITS AND ATTITUDES

	ACHIEVERS			UNDER-ACHIEVERS		
SCORE	GIRLS	BOYS	BOTH	GIRLS	BOYS	BOTH
55-59	1	0	1	0	1	1
50-54	4	0	4	0	1	1
45-49	4	2	6	0	1	1
40-44	3	2	5	1	5	6
35-39	11	5	16	0	7	7
30-34	14	6	20	1	11	12
25-29	11	3	14	3	9	12
20-24	10	6	16	8	19	27
15-19	13	2	15	3	16	19
10-14	10	4	14	1	16	17
5-9	1	0	1	3	5	8
0-4	0	0	0	1	0	1
TOTAL	82	30	112	21	91	112
MEAN	28.03	29.31	28.12	20.54	23.35	22.80
S.D.	11.70	11.60	11.30	9.81	11.05	10.55

Was one of the causes of the under-achiever's under-achievement the fact that they were spending too much time on extra-curricular activities?

i. Among the achievers (it should be noted from Table XI) that the most popular activity (47 girls, 11 boys) by far was athletics. 19 girls took part in modeling but all other activity was spread rather sparsely over the other possible activities. The 95 girls and 11 boys, making a total of 109 who took part, includes 23 students who took an active part in two or more activities so that not all of the achievers took part in extra-curricular activities. But enough of them did so to indicate that activity is possible along with achievement.

Most girls spent under an hour per week on their activity while most boys spent three hours or more. The boys' time was spent on sports which seemed to call for more practice time than other activities.

ii. The under-achievers seemed by Table XII to be just as active as the achievers. Although athletics occupied most of the boys, it is interesting that 10 of them spent time on religious clubs and 9 on hobby groups. (None of the achiever boys seemed to find the time or interest for school religious or hobby groups.) The few activities of the female under-achievers were spread among the activities but only 4 of the girls were active in modelling - the most popular activity for the female achievers.

Although 16 of the boys spent three hours or more on athletics, 17 of the boys spent only an hour or less on their activity

TABLE XI

MINUTES PER WEEK SPENT BY ACHIEVERS ON
EXTRA-CURRICULAR ACTIVITIES

Activity	30 Min. & Under		31-60		61-90		91-120		121-150		151-180		Over 180		Total		Combined Total
	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	
ATHLETICS	6	0	10	1	8	5	3	1	5	2	3	2	12	0	47	11	58
MUSICAL	1	-	-	-	-	-	2	-	-	-	-	-	1	-	4	0	4
DANCING	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	0	1
RELIGION	1	-	3	-	-	-	1	-	-	-	1	-	-	-	6	0	6
JOURNALISM	2	-	1	-	-	-	1	-	-	-	-	-	-	-	4	0	4
MATHEMATICS	1	-	1	-	-	-	-	-	-	-	-	-	1	-	3	0	3
	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	0	1
BY JUMP	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	1
IDENT	-	-	3	-	-	-	-	-	-	-	-	-	2	-	5	0	5
ELLING	6	-	13	-	-	-	-	-	-	-	-	-	-	-	19	0	19
ORETTES	1	-	2	-	1	-	1	-	-	-	-	-	-	-	5	0	5
ERS	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2
TOTAL	21	0	34	1	9	5	9	1	5	2	4	2	16	0	98	11	109
COMBINED TOTAL	21		35		14		10		7		6		16		109		

TABLE XII

MINUTES PER WEEK SPENT BY UNDER-ACHIEVERS ON
ON EXTRA-CURRICULAR ACTIVITIES

Per	30 Min. & Under		31-60		61-90		91-120		121-150		151-180		Over 180				
ITY	G	B	G	B	G	B	G	B	G	B	G	B	G	B	Total		Comb- ined Total
TICS	-	13	2	6	-	1	1	5	2	3	1	4	1	16	7	47	54
AL	-	-	-	-	-	-	-	-	-	2	-	2	-	2	0	6	6
ING	-	-	-	1	-	-	-	-	-	-	-	-	-	-	0	1	1
ION	-	-	1	5	-	-	-	4	-	-	-	1	-	-	1	10	11
ALISM	-	-	-	1	-	-	-	-	-	-	-	-	-	1	0	2	2
TICS	-	1	-	1	-	-	-	-	-	-	-	-	-	-	0	2	2
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
	-	2	1	1	-	-	1	4	-	2	-	-	-	-	2	9	11
NT	-	-	-	3	-	-	-	-	-	-	-	-	-	-	0	3	3
ING	1	-	3	-	-	-	-	-	-	-	-	-	-	-	4	0	4
TTES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
S	-	1	-	-	-	1	-	-	-	2	-	-	-	2	0	6	6
	1	17	7	18	1	2	2	13	2	9	1	7	1	19	15	85	100
ED	18		25		3		15		11		8		20		100		

indicating that they were not as active as the active achievers. The girls devoted less than an hour to their activity.

The achievers devoted a mean of 83.5 minutes (S.D. of 61.5) to their activities while the under-achievers devoted a mean of 99.5 minutes (S.D. of 66.0) to theirs. By analysis of variance of the means:

$$\text{General Mean} = \frac{83.5 \times 109 + 99.5 \times 100}{209} = 91.1$$

$$\begin{aligned} \text{SS between means} &= 109(83.5 - 91.1)^2 + 100(99.5 - 91.1)^2 \\ &= 13360 \end{aligned}$$

$$\text{SS within groups} = 108(61.5)^2 + 99(66.0)^2 = 839700$$

Source of variation	df	Sums of Squares	Mean Squares
Between Means	1	13360	13360
Within Groups	207	839700	4057

$$F = 3.29$$

$$df = \frac{1}{207}$$

This ¹F is not significant and we must retain the null hypothesis that there are no significant differences in the amount of time spent on extra-curricular activities by the two groups.

iii. Were the active Grade Tens also the office holders in their extra-curricular activities? Most executive positions are

held by Grade Eleven or Grade Twelve members of extra-curricular organizations. Thus it was rather surprising to find by Table XIII that 22 achievers held some kind of office. Most often they were the leaders of sub-groups or executive members with working offices rather than dignitary offices.

iv. In contrast, the under-achievers (Table XIV) were not recognized as leaders by their fellows and only six held any sort of official position. These were mostly room representatives on the students' union council who were elected in the first week of school just after the members of each home room had been thrown together after coming from many different junior high schools. The under-achievers were not leaders.

(d) Out-of-School Clubs

Did the pattern of out-of-school activities follow the same pattern as extra-curricular activities?

i. By table XV, 113 of the achievers took part in outside activities (actually all did not as 15 had two activities and 7 had more than two activities). Religious groups occupied 31 girls, with teen clubs (27) a close second; while athletics were most popular with 7 of the boys. Most girls spent one to two hours per week while again (probably because of the practice time required in hockey, etc.) the boys spent 3 or more hours. In both in-school clubs and this grouping (out-of-school clubs) the girls who were achievers spent less time on their activities than did the boys who were achievers.

TABLE XIII

EXECUTIVE POSITIONS HELD BY ACHIEVERS IN
EXTRA-CURRICULAR ACTIVITIES

	PRESI- DENT	VICE PRESI- DENT	SECRE- TARY	TREAS- URER	SMALL GROUP LEADER	EXECU- TIVE MEMBER (Rep)	SOCIAL CONVENOR PIANIST, ETCETERA	TOTALS
GIRLS	2	-	1	1	7	4	4	19
BOYS	-	-	1	1	-	1	-	3
BOTH	2	0	2	2	7	5	4	22

TABLE XIV

EXECUTIVE POSITIONS HELD BY UNDER-ACHIEVERS IN
EXTRA-CURRICULAR ACTIVITIES

	PRESI- DENT	VICE PRESI- DENT	SECRE- TARY	TREAS- URER	SMALL GROUP LEADER	EXECU- TIVE MEMBER (rep)	SOCIAL CONVENOR PIANIST, ETCETERA	TOTALS
GIRLS	-	-	-	-	-	-	-	0
BOYS	-	-	-	-	-	5	1	6
BOTH	0	0	0	0	0	5	1	6

TABLE XV
MINUTES PER WEEK SPENT BY ACHIEVERS
ON OUT OF SCHOOL CLUBS OR ORGANIZATIONS

Per	30 Min. & Under		31-60		61-90		91-120		121-150		151-180		Over 180		Total		
Activity	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	Combined Total
ETICS	-	-	-	1	-	-	1	3	-	-	-	-	3	7	4	11	15
CAL	-	-	1	-	1	-	-	1	1	-	-	2	1	-	4	3	7
GION	-	-	2	1	5	-	10	-	5	-	5	2	4	-	31	3	34
Y P	-	-	1	-	6	-	3	1	1	-	1	-	1	-	13	1	14
TS	-	-	-	-	-	-	-	-	-	-	-	-	1	3	1	3	4
TS	-	-	-	-	-	2	2	-	-	-	1	-	-	-	3	2	5
	-	-	2	-	4	-	10	5	2	1	3	-	6	1	27	7	34
	0	0	6	2	16	2	26	10	9	1	10	4	16	11	83	30	113
UNED AL	0		8		18		36		10		14		27		113		

ii. In the under-achievement group (table XVI), teen clubs (21 boys) were even more popular with the boys than athletics (17 boys) or cadets (13 boys). The female under-achievers had activities in varying fields. Of the 21 boys in teen clubs, 7 spent two hours per week there and 6 (strangely the very lowest under-achievers) spent three or more hours in teen activity. Cadets and athletics also occupied three or more hours for those who took part.

The achievers devoted a mean of 128 minutes to their activities (S.D. of 48.6) while the under-achievers devoted a mean of 131 minutes (S.D. of 57.6) to theirs. By analysis of variance of the means:

$$\text{General Mean} = \frac{128 \times 113 + 131 \times 89}{202} = 129$$

$$\begin{aligned} \text{S.S. between means} &= 113 (128 - 129)^2 + 89(131 - 129)^2 \\ &= 469 \end{aligned}$$

$$\text{S.S. within groups} = 112 (48.6)^2 + 88(57.6)^2 = 556704$$

Source of variation	df	Sums of Squares	Mean Squares
Between Means	1	469	469
Within Groups	200	556704	2784

$$F = .18$$

$$df = \frac{1}{200}$$

This F is not significant and we must retain the null hypothesis that the two groups do not spend a significantly different amount of time,

TABLE XVI

MINUTES PER WEEK SPENT BY UNDER-ACHIEVERS
ON OUT OF SCHOOL CLUBS OR ORGANIZATIONS

PER K	30 MIN. & UNDER		31-60		61-90		91-120		121-150		151-180		OVER 180		TOTAL		COM BINED TOTAL
	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	
PHYSICAL	-	1	2	1	1	1	1	2	-	-	1	2	1	10	6	17	23
ACADEMIC	-	-	-	-	-	1	-	-	-	-	-	1	-	2	0	4	4
RELIGION	-	1	1	2	-	1	-	4	-	3	-	-	-	2	1	13	14
BY JUP	-	-	1	-	-	-	1	3	-	-	-	-	-	-	2	3	5
ETS	-	-	-	-	-	-	-	4	-	-	-	3	-	6	0	13	13
UTS	-	-	-	1	-	-	-	-	-	1	-	1	-	1	0	4	4
N B	-	1	1	2	-	1	2	7	-	1	-	3	1	6	5	21	26
AL	0	3	6	6	1	4	4	20	0	5	1	10	2	27	14	75	89
BINED OTAL	3		12		5		24		5		11		29		89		

on out of school activities.

iii. Did the achievers hold office outside of school? A few more achievers (30 by Table XVII) held some sort of office in the out-of-school clubs to which they belonged, but in these clubs they were not necessarily first year members as they were in the school clubs: 7 of the female achievers were the president of the group to which they belonged - in most cases these were groups such as C.G.I.T. where the Grade Ten girls would be the senior members.

iv. The under-achievers (Table XVIII) held 25 out-of-school club executive positions to the achievers 30. None of the under-achievers were president or vice-president but 15 of them were leaders of small groups. This category included 8 boys who were cadet N.C.O.'s and 6 boys who were group leaders in the Scouts or Y.M.C.A. Very few of the achievers held this time consuming type of position, giving further evidence to show that the male under-achievers might be spending too much time on out-of-school activities.

(e) Hobbies

What are the hobbies of the two groups and how much time do they spend on them?

i. Most of the girl achievers (by table XIX) had a hobby of music or one of the other fine arts (17) or cooking and sewing (12). Table XXIV (discussed more fully later) showed 24 girls took music lessons - this includes all of the 17 in Table XX who called

TABLE XVII
EXECUTIVE POSITIONS HELD BY ACHIEVERS
IN OUT OF SCHOOL CLUBS

	PRESI- DENT	VICE PRESI- DENT	SECRE- TARY	TREAS- URER	SMALL GROUP LEADER	EXECU- TIVE MEMBER (REP)	SOCIAL CON- VENOR, PIANIST ETC.	TOTALS
LS	7	2	3	2	6	4	3	27
S	0	0	0	1	2	0	0	3
H	7	2	3	3	8	4	3	30

TABLE XVIII
EXECUTIVE POSITIONS HELD BY UNDER-ACHIEVERS
IN OUT OF SCHOOL CLUBS

	PRESI- DENT	VICE PRESI- DENT	SECRE- TARY	TREAS- URER	SMALL GROUP LEADER	EXECU- TIVE MEMBER (REP)	SOCIAL CONVENOR PIANIST ETC.	TOTALS
S	0	0	1	1	1	2	1	6
	0	0	3	1	14	1	1	19
	0	0	4	1	15	3	2	25

TABLE XIX

MINUTES PER WEEK SPENT BY ACHIEVERS
ON HOBBIES

PER K	30 MIN. & UNDER		31-60		61-90		91-120		121-150		151-180		OVER 180		TOTAL		
IVITY	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	COMB INED TOTAL
S & IC	2	-	1	1	2	-	1	1	3	-	-	-	9	-	19	2	21
AL OR WORK-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1	1	2
ING	1	-	-	-	-	-	1	-	1	-	-	-	5	1	8	1	9
LECT-	2	-	2	-	3	1	2	4	-	-	-	-	1	1	10	6	16
KING WING	1	-	2	-	-	-	3	-	1	-	1	-	4	-	12	0	12
TS HER (BS)	-	-	2	-	-	-	-	2	1	-	-	-	2	5	4	8	12
ENING TURE	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2
CO & TRIC-	-	-	-	-	-	-	-	-	-	-	-	-	-	-q	0	0	0
S & RAFT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
L	6	0	7	1	5	1	8	7	6	1	1	0	22	9	55	19	74
INED L	6		8		6		15		7		1		31		74		

TABLE XX
MINUTES PER WEEK SPENT BY UNDER-ACHIEVERS
ON HOBBIES

PER	30 MIN. & UNDER		31-60		61-90		91-120		121-150		151-180		OVER 180		TOTAL		
ACTIVITY	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	COMB- INED TOTAL
S & C	-	-	1	-	-	-	-	-	1	-	-	-	-	4	2	4	6
L OR -WORK	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	2
ING	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	2
JECT-	1	3	1	3	-	1	-	1	1	-	-	-	2	10	5	18	23
ING & ING	-	-	1	-	-	-	1	-	-	-	-	-	1	-	3	0	3
TS ER THAN (S)	-	-	1	1	-	-	1	-	-	-	-	-	-	13	2	14	16
ENING TURE	-	-	-	1	-	-	-	-	-	-	-	-	1	-	1	1	2
O & TRICITY	-	-	-	-	-	-	-	-	-	-	-	-	-	5	0	5	5
& RAFT	-	-	-	-	-	-	-	2	-	-	-	1	-	14	0	17	17
L	1	3	4	5	0	1	2	3	2	0	0	1	4	50	13	63	76
INED L	4		9		1		5		2		1		54		76		

music their hobby. Sports again (8) and collecting (6) were the main interests of the achiever boys. Seven boys spent one and one half to two hours on their hobby and 9 boys spent over three hours. Only 6 girls spent from one half to two and one half hours on their hobby; while 22 of the girls spent more than three hours indicating that it is possible to have a time consuming hobby and still succeed up to one's capacity in school.

ii Only 2 girl under-achievers were interested in arts or music, but unlike their achiever counterparts, 5 of them were collectors. Cooking and sewing occupied 3 and sports 2. The boy under-achievers' interests in collecting (18) and sports (14) was similar to the interests of the boy achievers but the male under-achievers were also interested in cars and airplanes (17) and radio and electricity (5).

Seventy four achievers (those who had hobbies) devoted a mean of 131 minutes (S.D. of 62.4) to their hobbies. The 76 under-achievers who had hobbies devoted a mean of 158 minutes per week (S.D. of 62.1) to theirs. By analysis of variance of the means:

$$\text{General Mean} = \frac{131 \times 74 + 158 \times 76}{150} = 144$$

$$\text{S.S. Between means} = 74 (131 - 144)^2 + 76 (158 - 144)^2 = 27402$$

$$\text{S.S. Within groups} = 73 (62.4)^2 + 75 (62.1)^2 = 573462$$

Source of variation	df	Sums of squares	Means squares
Between means	1	27402	27402
Within groups	148	573462	3875

$$F = 7.1$$
$$df = \frac{1}{148}$$

This F is significant at the .01 level¹ and we may conclude that under-achievers spend a significantly greater amount of time on hobbies than do achievers.

(f) Private Lessons

i. As mentioned previously, 24 girl achievers and 4 boy achievers took private music lessons. Table XXI shows that most people spent from two to eight hours (a considerable amount of time) in taking their outside lessons and in practising. Three girls and 1 boy spent over ten hours. It is perhaps of interest to note that 3 of the girls spent one to four hours taking private lessons in school subjects. In all, 34 or 30% took outside lessons of some kind.

ii. The incidence of private lessons among the under-achievers (Table XXII) was even less, (6 boys and 4 girls took music lessons and 2 girls took dancing lessons.) Most of the under-achievers who took outside lessons spent two to six hours in taking the lessons and in practising. Only 1 boy spent over ten hours.

The fact that only 1 boy took speech lessons showed either that speech lacks were not handicapping any of the under-achievers in Language 10 (as might have been suspected) or that if there were more who were being handicapped, nothing was being done outside of school about it.

1. Garrett op. cit. p.432.

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TABLE XXI
HOURS PER WEEK SPENT BY ACHIEVERS
ON PRIVATE LESSONS

ACTIVITY	UNDER 1 HOUR		1:01-2		2:01-4		4:01-6		6:01-8		8:01-10		OVER 10 HOURS		TOTAL		COMBINED TOTAL
	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	
ACADEMIC TRU- T	1	-	-	-	6	1	6	2	7	-	1	1	3	-	24	4	28
COACHING	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	0	1
TECH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
PROJECTS	-	-	1	-	2	-	-	-	-	-	-	-	-	-	3	0	0
SPORTS	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	1	2
TOTAL	1	0	1	0	8	1	7	2	8	0	1	1	3	1	29	5	34
PERCENTAGE	1		1		9		9		8		2		4		34		

TABLE XXII
HOURS PER WEEK SPENT BY UNDER-ACHIEVERS
ON PRIVATE LESSONS

ACTIVITY	UNDER 1 HOUR		1:01-2		2:01-4		4:01-6		6:01-8		8:01-10		OVER 10 HOURS		TOTAL		COMBINED TOTAL
	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	
ACADEMIC TRUANTS	-	-	1	-	2	1	-	3	1	1	-	-	-	1	4	6	10
CLIPPING	1	-	-	-	-	-	1	-	-	-	-	-	-	-	2	0	2
TECH	-	-	-	-	-	-	-	1	-	-	-	-	-	-	0	1	1
SCCHOOL PROJECTS	-	-	-	1	-	1	-	-	-	-	-	-	-	-	0	2	2
SPORTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
ALL	1	0	1	1	2	2	1	4	1	1	0	0	0	1	6	9	15
TOTAL	1		2		4		5		2		0		1		15		

Only 15 or 13% of the under-achievers took outside lessons of any kind.

$$\begin{aligned}\sigma_{P_1 - P_2} &= \sqrt{PQ \left(\frac{1}{N_1} + \frac{1}{N_2} \right)} \\ &= \sqrt{21 \times 79 \left(\frac{1}{112} + \frac{1}{112} \right)} \\ &= 5.45 \\ CR &= \frac{(P_1 - P_2) - \sigma_{P_1 - P_2}}{\sigma_{P_1 - P_2}} = 3.12\end{aligned}$$

This critical ratio is significant at the .01 level¹ and we may conclude that a significantly greater percentage of achievers took out-of-school lessons.

(g) After-School Jobs

i. Among the achievers (Table XXIII) the most common job for girls was "baby-sitting" (21), followed by clerking (11) and other unskilled labour such as being a waitress (8), 12 girls spent ten or more hours clerking or being a waitress. Most of the baby-sitters (15) spent under six hours.

The boy achievers worked at unskilled labour (7) such as garage work, clerking (3), delivering papers (2), and baby-sitting (2). The clerks and garage workers spent ten hours or more at their

1. Garrett, op. cit. p.427

TABLE XXIII

HOURS PER WEEK SPENT BY ACHIEVERS

ON JOBS

HOURS PER WEEK	UNDER 2 HOURS		2:01 - 4		4:01-6		6:01-8		8:01-10		10:01-12		OVER 12 HOURS		TOTAL		COM- BINED TOTAL
	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	
OCCUPATION																	
FORE WORK	-	-	-	-	3	1	1	-	1	-	4	1	2	1	11	3	14
STRESS RAGE TEND- T ETC.	1	-	-	-	1	1	-	2	-	-	2	1	4	3	8	7	15
OFFICE	-	-	-	-	-	1	-	1	-	-	1	-	-	-	1	1	2
BY TRAINING	3	2	9	-	4	-	1	-	2	-	1	-	1	-	21	2	23
PER MUTE	-	1	-	-	-	-	-	1	-	-	-	-	-	-	0	2	2
TOTAL	4	3	10	0	7	3	2	3	3	0	8	1	7	5	41	15	56
COMBINED TOTAL	7		10		10		5		3		9		12		56		

jobs. Exactly 50% of the boys (15) and 50% of the girls (41) had jobs and most of them spent a considerable amount of time at their jobs indicating that some achievers could earn money and still do well in school.

ii. The under-achievers (Table XXIV) were a little more active vocationally; 4 girls (67%) and 50 boys (55%) held jobs. The girls were either store clerks or baby-sitters and they devoted any amount of time from under two hours to over twelve to their job. The boys were usually unskilled labor (40) or clerks (8): 24 of these boys devoted over ten hours to their job.

The type of jobs that were most popular were very similar for both boys and girls in the two groups although no under-achievers girls were waitresses and no under-achiever boys delivered newspapers. The 25 boys who devoted 10 hours or more to their job were among the lowest achievers in the under-achiever grouping.

Fifty-six achievers (those who had jobs) devoted a mean of 7.22 hours (S.D. of 4.4) to their after school job per week. The sixty-four under-achievers who had jobs devoted a mean of 7.90 hours per week (S.D. of 4.1) to theirs. By analyses of variance of the means:

$$\text{General Mean} = \frac{7.22 \times 56 + 7.90 \times 64}{120} = 7.56$$

$$\begin{aligned} \text{S.S. between means} &= 56(7.22 - 7.56)^2 + 64(7.90 - 7.56)^2 \\ &= 8.87 \end{aligned}$$

$$\text{S.S. within groups} = 55(4.4)^2 + 64(4.1)^2 = 2133$$

TABLE XXIV

HOURS (PER WEEK) SPENT BY UNDER-ACHIEVERS ON JOBS

OCCUPATION	UNDER 2 HOURS		2:01-4		4:01-6		6:01-8		8:01-10		10:01-12		OVER 12 HOURS		TOTAL		COMBINED TOTAL
	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	
FOREWORK	-	-	2	1	3	1	-	-	-	-	-	3	1	3	6	8	14
ITRESS, RAGE TENDANT C.	-	2	-	3	-	5	-	4	-	2	-	5	-	14	-	40	40
OFFICE	-	-	-	-	-	1	-	-	-	-	-	-	-	-	0	1	1
BY-TTING	2	-	-	-	3	-	1	1	-	-	2	-	-	-	8	1	9
PERUTE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
TOTAL	2	2	2	9	6	7	1	5	0	2	2	8	1	17	14	50	64
MBINED TOTAL	4		11		13		6		2		10		18		64		

Source of variation	df	Sums of squares	Mean squares
Between Means	1	8.87	8.87
Within Groups	119	2133	17.92

$$F = .49$$

$$df = \frac{1}{119}$$

This is not significant at either the .01 or .05 levels¹ of confidence and we may conclude that the amount of time spent by the members of each group on after-school jobs is not significantly different.

The question remains "would they have devoted their time and interest to school work if they did not have a job, and thus pull themselves out of the under-achievement rating?"

Question 6 of the questionnaire follows up this line of thought by asking, "If you do not have an after-school job now, would you like one if you could get one? The yes answers were:

Achievers: (There were:
 Girls - 51 (41 without jobs)
 Boys - 15 (15 without jobs)

Under-achievers:
 Girls - 11 (8 without jobs)
 Boys - 46 (41 without jobs)

(Some of those who had jobs answered "yes" to indicate that they would like another job or a better one). The overwhelming affirmative response to this question indicated the keen interest taken by today's

1. Garrett, op. cit., p.432

youth in supplementing their incomes. Hohol¹ mentions this lack of money as a factor influencing early school leaving. He quotes Harold C. Hand's Study "Do School Costs Drive Out the Youth of the Poor?" as establishing hidden fees such as membership dues, rings, graduation costs, etc. as an important factor.

1. Hohol, op.cit., p.16.

VII Background Data

(a) Language spoken at Home

The area of the city from which the student body of the school is drawn is predominantly English speaking, i.e. the clusters of recent immigrants are in other portions of the city, thus the problem of a different language being spoken at home and at school is not acute here. Table XXV indicates that 4 girls came from homes where Ukrainian was spoken, 5 from German-speaking homes and 1 from a Polish-speaking home. Three boys came from German-speaking homes. Seven of the students said that the language was spoken seldom, 2 said half of the time and 4 said most of the time. The fact that these 13 people (11.6%) were achievers (some of them high in the achievement grouping) indicates that if the foreign language had been a handicap to their success in English language, they were able to overcome it.

Table XXVI shows that 21 of the under-achievers (18.8%) came from homes where a foreign language was spoken. Again Ukrainian (4 girls and 5 boys) and German (2 girls and 5 boys) were the most common foreign languages. In addition 2 boys came from Dutch speaking and 1 boy from each of Polish, Danish and Finnish speaking homes. Seven people said that the language was spoken seldom; 1 that it was spoken half of the time; and 8 that it was used most of the time by them when speaking to their father or mother. If a handicap is present, it seems to be most common in Ukrainian and German-speaking homes.

TABLE XXV
FOREIGN LANGUAGE SPOKEN AT HOME
BY ACHIEVERS

LANGUAGE	SELDOM		HALF OF THE TIME		MOST OF THE TIME		TOTAL		COMBINED TOTAL
	G	B	G	B	G	B	G	B	
SPANIAN	3	-	-	-	1	-	4	0	4
GERMAN	3	-	1	1	1	2	5	3	8
RUSCH	-	-	-	-	-	-	0	0	0
ENGLISH	1	-	-	-	-	-	1	0	1
SWEDISH	-	-	-	-	-	-	0	0	0
DANISH	-	-	-	-	-	-	0	0	0
TOTAL	7	0	1	1	2	2	10	3	13
COMBINED TOTAL	7		2		4		13		

TABLE XXVI
FOREIGN LANGUAGE SPOKEN AT HOME
BY UNDER-ACHIEVERS

	SELDOM		HALF OF THE TIME		MOST OF THE TIME		TOTAL		COMBINED TOTAL
LANGUAGE	G	B	G	B	G	B	G	B	
SPANIAN	3	1	-	4	1	-	4	5	9
GERMAN	1	-	-	2	1	3	2	5	7
ITALIAN	-	-	-	-	-	2	0	2	2
ENGLISH	-	1	-	-	-	-	0	1	1
SWEDISH	-	-	-	-	-	1	0	1	1
DANISH	-	1	-	-	-	-	0	1	1
TOTAL	4	3	0	6	2	6	6	15	21
COMBINED TOTAL	7		6		8		21		

Setting up the null hypothesis that the percentage of achievers coming from foreign speaking homes (11.6%) is not significantly smaller than the number of under-achievers coming from foreign speaking homes (18.8%), it is found that:

$$P = \frac{N_1 P_1 + N_2 P_2}{N_1 + N_2}$$

$$= \frac{112 \times 11.6 + 112 \times 18.8}{112 + 112} = 15.2\%$$

$$Q = 1 - P = 84.8\%$$

$$\sigma_{P_1 - P_2} = \sqrt{PQ \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}$$

$$= \sqrt{15.2 \times 84.8 \left(\frac{1}{112} + \frac{1}{112} \right)} = 4.8\%$$

$$CR = \frac{(P_1 - P_2) - \sigma}{\sigma_{P_1 - P_2}} = 1.5$$

In table D¹, the critical ratio is smaller than 1.97 (222 df) and we cannot be confident even at this .05 level that the null hypothesis is disproved. The percentage of achievers coming from foreign speaking homes is not significantly different in the two groups.

1. Garrett, op. cit. P 427

(b) Junior High Attended

The junior high school which the student had attended in Grade IX was tabulated in Table XXVII. Each school (except D which sends fewer) sends roughly the same number of students to the Grade Ten classes of Strathcona Composite High School.

School A contributes the fourth largest number of achievers (17), the most under-achievers(32) including the largest number of male under-achievers (28). School B sends the most achievers (27) and the second largest number of under-achievers (23). School C sends the third largest number of achievers. School D sends the fewest achievers (of the five schools) and the fewest under-achievers. School E sends the second largest number of achievers (25) and the second fewest number of under-achievers.

It would appear that the most under-achievers(particularly boys) came from the school A; that the most achievers came from school B; that school D sends fewest of either category; and that school E sends a respectable (second highest) number of achievers and only half as many under achievers as school A.

TABLE XXVII

JUNIOR HIGH SCHOOL ATTENDED IN GRADE NINE

ACHIEVERS AND UNDER-ACHIEVERS

SCHOOL	ACHIEVERS			UNDER-ACHIEVERS		
	G	B	BOTH	G	B	BOTH
SCHOOL A	9	8	17	4	28	32
SCHOOL B	18	9	27	2	21	23
SCHOOL C	19	2	21	5	15	20
SCHOOL D	8	3	11	1	5	6
SCHOOL E	18	7	25	7	8	15
OTHER EDMONTON SCHOOLS	4	0	4	1	4	5
SCHOOLS OUTSIDE OF EDMONTON	6	1	7	1	10	11
TOTAL	82	30	112	21	91	112
COMBINED TOTAL	112			112		

The 11 under-achievers who came from junior high schools other than in Edmonton, might have been affected more than the other freshmen-to-high-school by the new surroundings, different approaches of many teachers, etc.

Setting up the null hypothesis that the school attended in Grade IX and the rating as achiever or under-achiever are essentially unrelated variables, and testing the hypothesis by means of the chi square test, it is found that:

	School A	B	C	D	E	OTHERS	TOTAL
ACHIEVERS	17	27	21	11	25	11	112
fe	24.5	25.0	20.5	8.5	20.0	13.5	
UNDER- ACHIEVERS	32	23	20	6	15	16	112
TOTALS	49	50	41	17	40	27	224

1. Calculation of independence values (fe)

e.g. for achievers from schoolA =

$$\frac{49 \times 112}{224} = 24.5$$

$$\begin{aligned}
 2. \quad \chi^2 &= \sum \left(\frac{(f_o - f_e)^2}{f_e} \right) \\
 &= 2.29 + 2.29 + .16 + .16 + .01 + .01 + .74 + .74 \\
 &\quad + 1.25 + 1.25 + .46 + .46 = 9.82
 \end{aligned}$$

$$df = (6-1)(2-1) = 5$$

From table E₁, it is found that 9.82 lies beyond the .05 level of confidence between .05 and .10 and the null hypothesis must be retained. Junior high attended and rating as achiever or under-achiever are not significantly related variables.

(c) Parents' Occupations

If tables XXVIII which shows the occupations (other than housewife for the mother) of the parents of the achievers and table XXIX which shows the same for the under-achievers, are combined and condensed the picture of parental occupation becomes more readily interpreted.

	<u>Category</u>	<u>Achiever</u>	<u>Under-achiever</u>
Prof. or Owner	(#1,2)	71	30
White Collar	(#3,4,5)	53	72
Labor	(#5,6)	13	39

By means of the chi-square test, the null hypothesis was tested, that achiever or under-achiever rating and father's occupation are essentially unrelated variables.

TABLE XXVIII
OCCUPATIONS OF PARENTS - ACHIEVERS.

	FATHER			MOTHER (Other Than Housewife)			
OCCUPATION	G	B	TOTAL	G	B	TOTAL	COMBINED TOTAL
PROFESSIONAL	8	2	10	6	-	6	16
OWNER OR MANAGER OF A BUSINESS	36	13	49	6	-	6	55
CLERK OR SALESMAN	8	5	13	11	1	12	25
OTHER WHITE-COLLAR WORKER	8	-	8	-	1	1	9
SKILLED TECHNICIAN	16	2	18	1	-	1	19
MANUAL LABOUR	1	7	8	-	2	2	10
HOUSE-KEEPER	-	-	0	3	-	3	3
PENSION	-	-	0	-	-	0	0
DECEASED	5	1	6	1	-	1	7
TOTAL	82	30	112	28	4	32	144

TABLE XXIX
OCCUPATIONS OF PARENTS - UNDER-ACHIEVERS

	FATHER			MOTHER (Other Than Housewife)			
OCCUPATION	G	B	TOTAL	G	B	TOTAL	COM- BINED TOTAL
PROFESSIONAL	2	2	4	4	4	8	12
OWNER OR MANAGER OF A BUSINESS	5	11	16	-	2	2	18
CLERK OR SALESMAN	4	14	18	4	11	15	33
OTHER WHITE COLLAR WORKER	3	14	17	-	-	0	17
SKILLED TECHNICIAN	4	19	23	-	-	0	23
MANUAL LABOUR	3	30	33	-	2	2	35
HOUSE-KEEPER	-	-	0	1	3	4	4
PENSION	-	1	1	-	-	0	1
DECEASED	-	-	0	-	-	0	0
TOTAL	21	91	112	9	22	31	143

	Prof. or Owner	White Collar	Labor	Deceased or Pension	Total
ACHIEVERS	59	39	8	6	112
fe	39.5	48.5	20.5	3.5	
UNDER- ACHIEVERS	20	58	33	1	112
TOTAL	79	97	41	7	224

1. Calculation of independence values (fe)

e.g. for achievers whose fathers were professional men
or owners of businesses.

$$\frac{79 \times 112}{224} = 39.5$$

$$2. \chi^2 = \sum \left(\frac{(f_o - f_e)^2}{f_e} \right)$$

$$= 9.63 + 9.63 + 1.86 + 1.86 + 7.62 + 7.62 + 1.78 + 1.78$$

$$= 41.78$$

$$df = (4-1) (2 - 1) = 3$$

From table E_1 , it is found that 41.78 lies beyond the P at the .01 level of confidence and we may discard the null hypothesis. There are significant differences between the father's occupations of achievers and under-achievers.

1. Garrett, op.cit. P428

It would appear that most of the achievers (90%) come from the professional or semi-professional classes and that very few (10%) come from the laboring class. This preponderance is made-up of 62% of all the boys who achieve from professional, 50% of all the girls who achieve from professional, and 40% of the girls from white collar homes. 50% of the under-achievers come from the semi-professional or white collar worker class of clerks, salesmen or junior accountants. Nearly an equal number come from the professional group (21%) and the labouring group (27%). Eleven girls or (37%) of all the girls who were under-achieving come from homes where at least one of the parents was a professional person. Twenty-six per cent of the boys who were under-achieving came from labour class homes and 41% of the boys came from white-collar homes. Thus most under-achieving girls come from professional homes while most under-achieving boys come from white-collar or labouring homes.¹

Does the fact that the mother is working affect the student's achievement?

		<u>Number with mother working</u>	<u>Percentage of no. in grouping</u>
Achievers	Girls	28	34%
	Boys	4	13%
Under-Achievers	Girls	9	43%
	Boys	22	24%

To 34% of the girls who were achievers, the fact that their mothers were working (with possible added responsibility to them) was not an insurmountable handicap. To 43% of the girls who were under-achievers, the added burden may have been a cause of the difficulty.

1. The above percentages were calculated from the total number of parents working for each category of student i.e. Achievers - 111 girls, 34 boys. Under-achievers - 30 girls, 113 boys.

There were fewer male achievers and under-achievers whose mother was working. Numerically, 22 of the boy under-achievers had his mother in the role of wage earner. This may have been one of his causes of under-achievement.

(d) Parents' Education

Even though the students had been told to estimate if they were not sure of the amount of their parents' education, 4 achievers left the column for education of father blank or wrote in that they didn't know. Four achievers did the same for education of mother. Three under-achievers left the education of father column blank and 7 under-achievers left the education of mother column blank. The median education for both mothers and fathers of both achievers and under-achievers was "some high school", in Table XXX. In the three rankings higher than this there were 42 fathers whose children were achievers compared to 30 fathers whose children were under-achievers. Among these fathers, 11 fathers of achievers had graduated from a university while only 5 fathers of under-achievers were university graduates.

In the three highest rankings from "graduation from high school" to "graduation from university" there were 45 mothers whose children were achievers and 31 mothers whose children were under-achievers. The ratio of university trained mothers was 7 to 3 for the achievers.

There were more mothers and fathers of achievers with a high standard of education than there were mothers and fathers of under-achievers with a high education.

TABLE XXX
EDUCATION OF PARENTS - ACHIEVERS AND
UNDER-ACHIEVERS

	ACHIEVERS						UNDER-ACHIEVERS					
	FATHER			MOTHER			FATHER			MOTHER		
EDUCATION	G	B	BOTH	G	B	BOTH	G	B	BOTH	G	B	BOTH
DID NOT ATTEND SCHOOL	1	1	2	-	-	0	3	5	8	2	5	7
PUBLIC SCHOOL	26	6	32	23	6	29	5	28	33	7	25	32
SOME HIGH SCHOOL	23	9	32	25	9	34	7	31	38	4	31	35
GRADUATED FROM HIGH SCHOOL	10	5	15	9	6	15	2	7	9	3	18	21
SOME TRAINING BEYOND HIGH SCHOOL GRADUATION	14	2	16	19	4	23	4	12	16	2	5	7
UNIVERSITY DEGREE	5	6	11	4	3	7	1	4	5	2	1	3
TOTAL			108			108			109			105

On the other end of the scale, only 2 parents of achievers had not attended school while 15 parents of under-achievers had never attended a school. This lack of contact may have colored the opinion of the latter group concerning the value of education and this opinion could conceivably have been passed on to their offspring.

By means of the chi-square test, the null hypothesis was tested that achiever or under-achiever rating and parent's education are essentially unrelated variables.

	Did Not Attend	Public	Some High	High	Beyond High	University Degree	Total
ACHIEVER	2	61	66	30	39	18	216
fe	8.5	63	69.5	0	31	13	
UNDER- ACHIEVER	15	65	73	30	23	8	214
TOTAL	17	126	139	60	62	26	430

1. Calculation of independence values (fe)

e.g. - for achievers whose parents did not attend school

$$= \frac{17 \times 216}{430} = 8.5$$

= for under achievers whose parents did not attend school

$$= \frac{17 \times 214}{430} = 8.5$$

$$2. \chi^2 = \sum \left(\frac{(fo - fe)^2}{fe} \right)$$

$$= 4.97 + 4.97 + .07 + .07 + .32 + .32 + 2.07 + 2.07 + 1.92 + 1.92 = 18.70$$

$$df = (6 - 1) (2 - 1) = 5$$

From table E_1 , it is found that 18.70 lies beyond the P at the .01 level of confidence and we may discard the null hypothesis.

There are significant differences between the education of parents of achievers and the education of parents of under-achievers.

1. Garrett, op. cit. p.428.

VIII PERSONALITY RATINGS

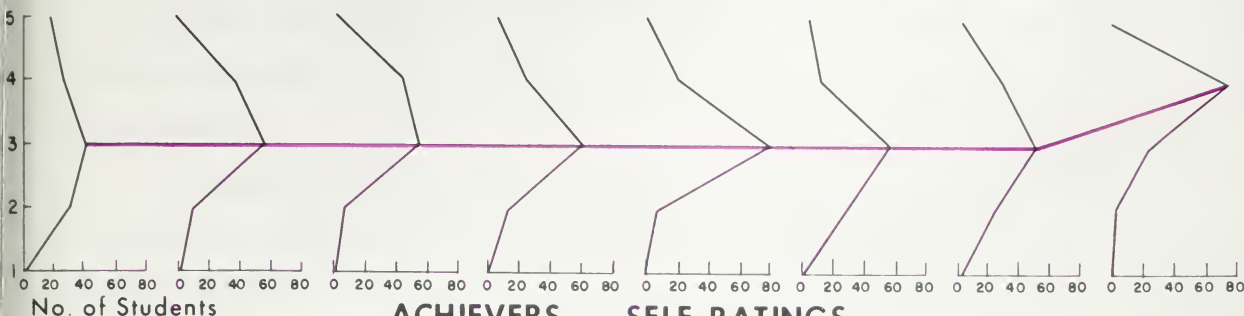
The answers to Questions 13 to 20 on the student questionnaire (the self rating scale) and the rating scales filled out by teachers are grouped according to each aspect of personality. The four tabulations (from table XXXI to table LXII) which list ratings for each particular aspect, are in the order of:

1. Self-ratings of achievers.
2. Teachers' ratings of achievers.
3. Self-ratings of under-achievers.
4. Teachers' ratings of under-achievers.

Note that Questions 15 on the student rating scale (Question 3 the teacher-rating scale) dealing with flexibility has been inverted on these tables and now ranges from a low of "stubborn" (number 1 on Tables XXXIX to XXXXII) to a high of "too easily persuaded".

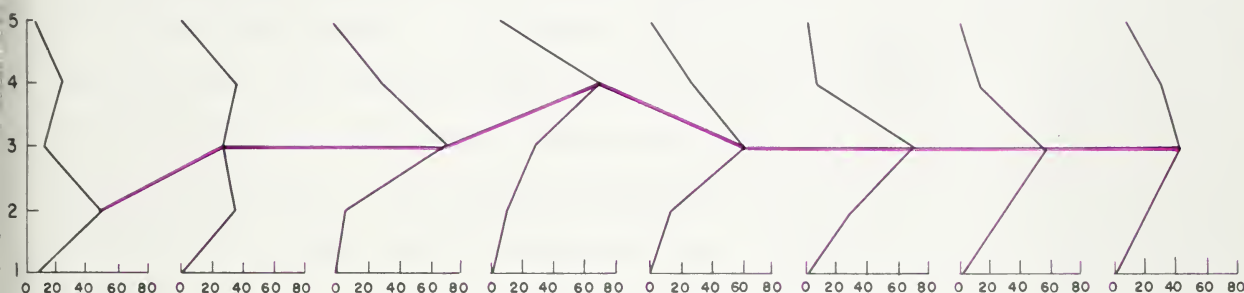
Figures 5 to 8 give personality profiles for the two groups as rated by themselves and as rated by teachers ranging in degree of the personality factor from 1 to 5. Figure 5 shows that the achievers consider themselves to be very stable individuals. The average achiever feels that he is a rather good conversationalist but 31 out of 112 achievers (36%) consider themselves rather quiet. The achievers felt that they were average on the next six aspects of personality and described themselves as "able to accept mild criticism", "moderately adaptable", "average persistence", "sometimes self-conscious in social relationships", "neither calm emotionally nor ruled by emotion", and "sometimes anxious about problems". In the last category of personality they rated themselves higher than the middle

SELF RATINGS AND TEACHER'S RATINGS FOR ACHIEVERS AND UNDER-ACHIEVERS ON A PERSONALITY SCALE



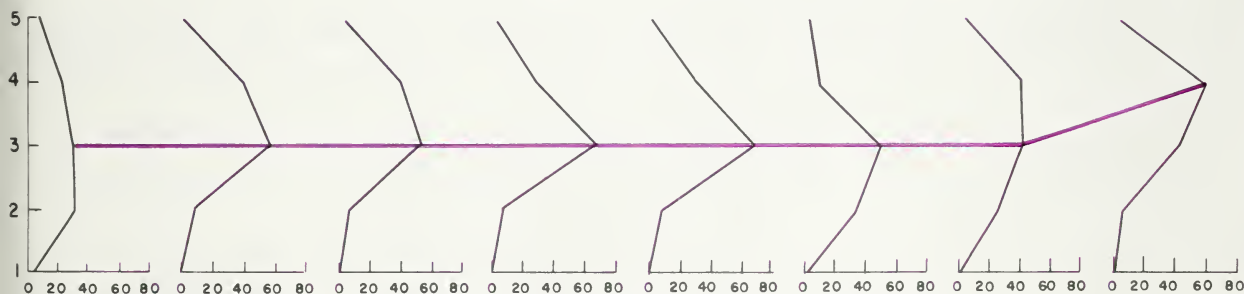
ACHIEVERS - SELF RATINGS

FIGURE 5



ACHIEVERS - TEACHER RATINGS

FIGURE 6



UNDER-ACHIEVERS - SELF RATINGS

FIGURE 7



UNDER-ACHIEVERS - TEACHER RATING

FIGURE 8

ranking and said they enjoyed being with people.

In the only difference on the basis of sex from the average-achiever profile, the boys felt that they were always ready to experiment.

The profile (Figure 6) of teachers' ratings of achievers indicates that the teachers' opinions of the achievers is very similar to the "stable individual" opinion of the achievers themselves. The teachers felt that instead of being rather good conversationalists, the achievers tended to be rather quiet; rather than average in persistence, the teachers felt that the achievers did not deviate from the average and "enjoy being with people" but were instead merely "friendly". In the only deviation on the basis of sex, the teachers felt that the boy achievers were indifferent about new friends.

The profile of the average of the under-achievers (Figure 7) indicates that like the achievers, they too considered themselves to be stable individuals. Average on every aspect but the last in which they felt that they enjoyed being with people. The boy under-achievers leaned slightly toward "rather quiet" rather than "a rather good conversationalist" and the girls (like the achiever-boys) said that they were "always ready to experiment" rather than "moderately adaptable".

But the teachers who rated the under-achievers did not agree with the self-ratings. They felt (Figure 8) that they were not average on the first four categories; instead - "rather quiet, rather sensitive, slow to adapt to change and inclined to give up too easily". They rated them "rather easy-going" and merely "friendly".

A considerable number of boys (27) were rated as "can accept considerable criticism" and the majority of the girls (11) were rated "sometimes anxious" rather than "rather easy going". The teachers did not feel that the personalities of the under-achievers were as normal as the under-achievers themselves felt that they were.

(Note that Tables XXXI to LXII which are discussed previously in this chapter, follow on pages 96 to 111 inclusive.)

TABLE XXXI

SELF-RATING OF TALKATIVENESS - ACHIEVERS

	1. TALK VERY LITTLE	2. RATHER QUIET	3. A RATHER GOOD CONVERSATION- ALIST	4. A GOOD CON- VERSATION- ALIST	5. TALK TOO MUCH
GIRLS	2	22	30	23	5
BOYS	1	9	10	5	5
BOTH	3	31	40	28	10
%	3	27	36	25	9

TABLE XXXII

TEACHERS' RATING OF TALKATIVENESS - ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	7	35	14	19	7
BOYS	4	15	2	7	2
BOTH	11	50	16	26	9
%	10	45	14	23	8

TABLE XXXIII

SELF-RATING OF TALKATIVENESS - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	4	9	5	3
BOYS	5	30	26	20	10
BOTH	5	34	35	25	13
%	4	30	31	23	12

TABLE XXXIV

TEACHERS' RATING OF TALKATIVENESS - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	4	6	4	3	4
BOYS	11	33	14	18	15
BOTH	15	39	18	21	19
%	13	35	16	19	17

TABLE XXXV

SELF-RATING OF SENSITIVITY TO CRITICISM - ACHIEVERS

	1. VERY SENSITIVE	2. RATHER SENSITIVE	3. CAN ACCEPT MILD CRITICISM	4. CAN ACCEPT CONSIDERABLE CRITICISM	5. CAN ACCEPT ALL CRITICISM
GIRLS	3	11	42	26	-
BOYS	1	2	16	11	-
BOTH	4	13	58	37	0
%	4	12	52	33	0

TABLE XXXVI

TEACHERS' RATING OF SENSITIVITY TO CRITICISM - ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	1	27	24	29	1
BOYS	1	10	11	8	-
BOTH	2	37	35	37	1
%	2	33	31	33	1

TABLE XXXVII

SELF-RATING OF SENSITIVITY TO CRITICISM - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	3	12	6	-
BOYS	1	5	47	36	2
BOTH	1	8	59	42	2
%	1	7	53	37	2

TABLE XXXVIII

TEACHERS' RATING OF SENSITIVITY TO CRITICISM - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	3	8	6	4	-
BOYS	10	30	23	27	1
BOTH	13	38	29	31	1
%	12	34	26	27	1

TABLE XXXIX
SELF-RATING OF FLEXIBILITY - ACHIEVERS

	1. STUBBORN UNWILL- ING TO EXPERIMENT	2. SLOW TO ADAPT TO CHANGE	3. MODERATELY ADAPTABLE	4. ALWAYS READY TO EXPERIMENT	5. TOO EASILY PERSUADED; UNSTABLE
GIRLS	1	4	46	30	1
BOYS	2	2	9	17	-
BOTH	3	6	55	47	1
%	3	5	49	42	1

TABLE XXXX
TEACHERS' RATING OF FLEXIBILITY - ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	3	55	24	-
BOYS	-	3	17	10	-
BOTH	0	6	72	34	0
%	0	5	64	30	0

TABLE XXXXI
SELF-RATING OF FLEXIBILITY - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	1	7	10	3
BOYS	1	4	50	33	3
BOTH	1	5	57	43	6
%	1	5	51	38	5

TABLE XXXXII
TEACHERS' RATING OF FLEXIBILITY - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	8	9	4	-
BOYS	7	37	33	13	1
BOTH	7	45	42	17	1
%	6	40	38	15	1

TABLE XXXXIII
SELF-RATING OF PERSISTENCE - ACHIEVERS

	1. DISCOURAGED AT LEAST OBSTACLE	2. GIVE UP TOO EASILY	3. AVERAGE	4. PERSISTENT	5. EXTREMELY PERSISTENT
GIRLS	-	10	50	17	5
BOYS	-	7	11	9	3
BOTH	0	17	61	26	8
%	0	15	54	23	8

TABLE XXXXIV
TEACHERS' RATING OF PERSISTENCE - ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	6	22	49	5
BOYS	-	3	6	20	1
BOTH	0	9	28	69	6
%	0	8	24	62	6

TABLE XXXXV
SELF-RATING OF PERSISTENCE - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	3	14	3	1
BOYS	-	5	54	29	3
BOTH	0	8	68	32	4
%	0	8	61	27	4

TABLE XXXXVI
TEACHERS' RATING OF PERSISTENCE - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	2	7	2	8	2
BOYS	17	38	22	13	1
BOTH	19	45	24	21	3
%	17	40	21	19	3

TABLE XXXXVII
SELF-RATING OF CONFIDENCE - ACHIEVERS

	1. PAINFULLY SELF- CONSCIOUS	2. TIMID OFTEN EMBARRASSED	3. SOMETIMES SELF- CONSCIOUS	4. CONFIDENT	5. VERY CONFIDENT
GIRLS	-	6	62	13	1
BOYS	1	2	18	8	1
BOTH	1	8	80	21	2
%	1	7	71	19	2

TABLE XXXXVIII
TEACHERS' RATING OF CONFIDENCE - ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	1	11	45	24	1
BOYS	-	4	17	9	-
BOTH	1	15	62	33	1
%	1	14	55	29	1

TABLE XXXIX
SELF-RATING OF CONFIDENCE - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	2	13	6	0
BOYS	1	8	56	25	1
BOTH	1	10	69	31	1
%	1	9	61	28	1

TABLE L
TEACHERS' RATING OF CONFIDENCE - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	2	7	5	6	1
BOYS	4	20	31	31	5
BOTH	6	27	36	37	6
%	6	23	32	33	6

TABLE LI

SELF-RATING OF EMOTIONALITY - ACHIEVERS

	1. ALWAYS VERY CALM	2. USUALLY CALM & OBJECTIVE	3. NEUTRAL	4. CONTROLLED LARGELY BY EMOTION	5. VERY EXCIT- ABLE; HIGH STRUNG
GIRLS	1	19	44	12	6
BOYS	-	13	13	4	-
BOTH	1	32	57	16	6
%	1	28	51	14	6

TABLE LII

TEACHERS' RATING OF EMOTIONALITY - ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	1	18	55	7	1
BOYS	1	11	15	1	2
BOTH	2	29	70	8	3
%	2	26	62	7	3

TABLE LIII

SELF-RATING OF EMOTIONALITY - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	5	10	3	3
BOYS	5	32	40	11	3
BOTH	5	37	50	14	6
%	5	32	45	12	6

TABLE LIV

TEACHERS' RATING OF EMOTIONALITY - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	4	12	4	1
BOYS	-	11	55	23	2
BOTH	0	15	67	27	3
%	0	13	60	24	3

TABLE LV
SELF-RATING OF ANXIETY - ACHIEVERS

	1. WORRY CONSTANTLY	2. WORRY QUITE OFTEN	3. SOMETIMES ANXIOUS	4. RATHER EASY GOING	5. EXTREMELY CAREFREE
GIRLS	3	18	44	16	1
BOYS	1	6	9	11	3
BOTH	4	24	53	27	4
%	4	21	47	24	4

TABLE LVI
TEACHERS' RATING OF ANXIETY - ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	23	42	14	3
BOYS	-	9	17	4	-
BOTH	0	32	59	18	3
%	0	29	52	16	3

TABLE LVII
SELF-RATING OF ANXIETY - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	1	4	9	7	-
BOYS	1	20	33	34	4
BOTH	2	24	42	41	4
%	2	21	37	36	4

TABLE LVIII
TEACHERS' RATING OF ANXIETY - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	5	11	5	-
BOYS	1	16	22	42	10
BOTH	1	21	33	47	10
%	1	19	29	42	9

TABLE LIX

SELF-RATING OF FRIENDLINESS - ACHIEVERS

	1. AVOID MEETING PEOPLE	2. INDIFFERENT ABOUT NEW FRIENDS	3. FRIENDLY	4. ENJOY BEING WITH PEOPLE	5. A VERY GOOD MIXER
GIRLS	1	3	21	56	1
BOYS	1	1	9	19	-
BOTH	2	4	30	75	1
%	2	4	27	67	1

TABLE LX

TEACHERS' RATING OF FRIENDLINESS - ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	14	34	28	6
BOYS	-	12	8	8	2
BOTH	0	26	42	36	8
%	0	24	37	32	7

TABLE LXI
SELF-RATING OF FRIENDLINESS - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	-	-	5	16	-
BOYS	2	6	37	42	4
BOTH	2	6	42	58	4
%	2	6	37	51	4

TABLE LXII
TEACHERS' RATING OF FRIENDLINESS - UNDER-ACHIEVERS

	1.	2.	3.	4.	5.
GIRLS	1	3	10	5	2
BOYS	3	30	27	19	12
BOTH	4	33	37	24	14
%	4	29	33	21	13

IX GENERAL SUMMARY OF FINDINGS:

CONCLUSION: AND RECOMMENDATIONS

(a) General Summary of Findings.

This study was an attempt to discover variables which differentiate between achievers and under-achievers in English Language Ten in a large Composite High School.

For each of the 448 Grade 10 students registered in English Language 10 in Strathcona Composite High School in 1956-57, an achievement ratio was found by dividing an index of performance in English by an index of mental capacity. The achievers were defined as those 112 students who had the highest achievement ratio and the under-achievers as those 112 students who had the lowest achievement ratio.

Information about the two groups was found with the use of a questionnaire (including a self-rating scale of personality), a scale of personality rated by teachers, the Brown-Holtzman Survey of Study Habits and Department of Education cumulative records. This information is summarized under the following dimensions:

1. Personal Data

The achiever group was composed of 82 girls and 30 boys with a mean chronological age of 16 years 0 months and a mean mental age of 15 years 11 months. The under-achiever group was composed of 21 girls and 91 boys with a mean chronological age of 16 years 3 months and a mean mental age of 15 years 7 months.

2. Previous School Achievement

(a) While 69% of the achievers received a mark of H or A on the Grade Nine departmental language examination, only 37% of the under-achievers received a mark H or A on the same examination.

(b) Only 7 of the achievers had ever failed while 38 under-achievers had failed at least one grade. Ten achievers and 4 under-achievers had been accelerated.

3. Interests

(a) Of the achievers, 71% were registered in the academic pattern of courses and none were registered in the shop pattern. Of the under-achievers, 53% were registered in the academic pattern and 29% in the general pattern.

(b) The achievers had significantly better study habits and attitudes than the under-achievers on the Brown Holtzman Survey of Study Habits and Attitudes Scale.

(c) Athletics was by far the most popular extra-curricular activity for all students. Twenty per cent of the achiever girls took part in the modeling club. The majority of the students spent one hour per week on their activity. Twenty-two achievers and 6 under-achievers held an executive position.

(d) Religious and teen clubs were the most belonged-to out of school organization, by the achievers. Athletics, teen, religious and cadet organizations in that order, were joined most often by the under-achievers. The achievers spent two to three hours and the under-achievers three or more hours on their activity.

Thirty achievers held office (quite often a major position) and 25 under-achievers held office (Usually as leaders of small sub-groups).

(e) While only 28% of the achievers spent over three hours per week on their hobby, 48% of the under-achievers devoted that much time. The male under-achievers deviated from the usual hobbies of only sports or some sedentary activity and were interested in cars, airplanes, radio and electricity.

(f) Most of the 34 achievers who took private lessons spent from 2 to 8 hours: 15 under-achievers took such lessons, devoting the same amount of time to them.

(g) Exactly 50% of the girl achievers and 50% of the boy achievers had jobs: 12 % spent ten or more hours at their job. A total of 46% of the girl under-achievers and 57% of the boy under-achievers worked after school (26% of the boys spent ten or more hours). There was an overwhelming affirmative response to the question, "If you do not have an after school job now, would you like one if you could get one?"

4. Background Data

(a) While 13 achievers came from foreign-speaking homes; only 4 came from homes where the foreign language was spoken most of the time. Twenty-one under-achievers came from such homes (including 9 Ukrainian and 7 German). Eight signified that the language was spoken most of the time.

(b) More under-achieving boys (28) came from the 'best' district than from any other single district. Twenty-seven of the achievers came from the 'second best' district.

(c) Fifty per cent of the achievers had a parent who was a professional person or the owner or manager of a business. Twenty-one per cent of the under-achievers' parents came from this grouping. Twenty-seven per cent of the under-achievers came from the 'labor' group.

Thirty-four per cent of the mothers of girl achievers were employed and 43% of the mothers of girl under-achievers were wage earners. In the same category, the boys were: achievers - 13%, under-achievers - 24%.

(d) The median amount of education for mothers and fathers of both groups was "some high school". There were 42 fathers with more education than this (including 11 university graduates) whose children were achievers; compared to 30 fathers with more education than "some high school" (including 5 university graduates) whose children were under-achievers. The number of mothers of achievers with educational qualifications above "some high school" were 45 (including 7 university graduates). Education of mothers of under-achievers above "some high school", numbered 31 (including 3 university graduates).

5. Personality Ratings

Both achievers and under-achievers rated their own personalities as very stable. (The teachers were not informed as to which students were in the achiever or under-achiever category of this study.) The ratings of achievers by teachers agreed with the students' self-ratings but the ratings of under-achievers by the teachers did not agree with the self-ratings. The teachers rated the under-achievers as "rather quiet", "rather sensitive", "slow to adapt to change", and "inclined to give up too easily".

(b) Conclusion

Significant differences were :

Dimension

Conclusion

1. Personal data

- (a) Sex - Significant at the .01 level that there were more girls in the achiever groups.
- (b) Chronological age - Significant at the .01 level that the achievers were younger than the under-achievers.
- (c) Intelligence - No significant differences found.

2. Previous School Achievement

- (a) Grade IX language mark - Significant at the .01 level that more achievers than under-achievers attained a mark of H or A in the Department of Education Grade IX Language Examination.
- (b) Retardation - Significant at the .01 level that more under-achievers than achievers had failed at least once from Grades One to Nine.
- (c) Acceleration - Too few students of either groups had been accelerated, to show any significant difference between the two groups.

3. Interests

- (a) Pattern of Grade X Courses - Significant at the .01 level that the number taking an academic pattern was greater in the achiever groups than in the under-achiever.

- (b) Study habits - Significant at the .01 level that the achievers had better study habits and attitudes than the under-achievers.
- (c) Participation in extra-curricular activities - No significant difference found in time spent by the two groups on extra-curricular activities.
- (d) Out of school clubs - No significant difference found in time spent by the two groups on out of school clubs.
- (e) Hobbies - Significant at the .01 level that the under-achievers spent a greater amount of time on hobbies than did the achievers.
- (f) Private lessons - Significant at the .01 level that a greater number of achievers than under-achievers took out-of-school lessons.
- (g) After School jobs - No significant difference found in the time spent by the groups on after school jobs.

4. Background data

- (a) Language spoken at home - No significant difference found in the numbers coming from foreign-speaking homes. (The numbers in both groups were very small).
- (b) Junior High attended - No significant relation found between the rating as achiever and under-achiever and this measure.

- (c) Parents' occupations - Significant at the .01 level that there are differences between the fathers' occupations of achievers and under-achievers, (Achievers more often professional or owner - under-achiever more often white collar or labor).
- (d) Parents' schooling - Significant at the .01 level that the parents of achievers had more years of formal school training than did the parents of under-achievers.

Personality Ratings

Achievers

- The modal rating for each aspect of personality was used to compare the dimensions.

(a) Self ratings

Achievers rated themselves as very stable personalities: average in every aspect except friendliness where they were slightly above average.

(b) Teacher ratings

- Teachers generally agreed with the stable personality ratings. They rated the achievers as slightly more talkative and slightly more persistent but average in friendliness.

Under-achievers

-

(a) Self ratings

- Under-achievers also rated themselves as very stable personalities, average in every aspect except friendliness where they were slightly above average.

(b) Teacher ratings

- Teachers disagreed on six of eight aspects with the under-achievers self-rating. They rated the under-achievers lower and "rather quiet, rather sensitive, slow to adapt to change, inclined to give up too easily, rather easy going" and friendly" rather than above average in friendliness.

No such person as the "average" achiever or under-achiever probably exists and the investigator does not suggest that individual students be categorized or labeled, e.g.,

Girl - therefore probably an achiever, good study habits, etc.

Boy - therefore probably an under-achiever, poor study habits, etc.

or in any other way; but the differences indicated might be useful in predicting the achievement of the group for purposes of special groupings, special curriculum and remedial instruction.

Many of the factors which seem associated with under-achievement cannot be changed but others may provide opportunity to raise the under-achiever from that category. These include pattern of courses (some under-achievers are out of their depth and not in the field of their interests); study habits (many are building a mental block of dislike, and others do not know how to study); and time spent on out of class activities (the ten or more hours spent by 26% of the male under-achievers probably detracted from out-of-class school work).

The fact that the two groups were spread over the range of intelligence from below average to superior supports the view that performance in school work should be reported not only in relation to

the rest of the group but also in relation to the individual's capacity i.e. a student may be performing in the middle or even top portion of the class but may be performing quite unsatisfactorily in relation to his capacity. Conversely, a student in the lowest portion of the class may be working to the utmost and be doing very well in relation to his capacity. The implications on the hopes of parents and the vocational plans of students are obvious. The achievement ratio found by dividing a performance index by a capacity index is an important measure.

(c) Recommendations for Further Study

1. A study of the same students could be made at the end of the Grade Twelve year. The results of the Grade Twelve final examination in language could be a measure of scholastic achievement. Many of the under-achievers would probably have dropped out but it would be interesting to see if the remaining students were still achieving as they were in Language Ten.

2. The study could be expanded to take in more schools. Although the school environment would be different, such a study could indicate the degree to which the predictive factors operated over a very large population.

3. In such a study as suggested in #2, there would be a large enough population of Grade Elevens who were taking Language Ten, so that they could be investigated and compared with achievers and under-achievers for Grade Ten.

4. Drop-outs from the population of this study, between Grades Ten and Twelve could be studied.

5. The students who had withdrawn from school during the term (e.g. between September 1, 1956 and May 1, 1957) could be studied intensively. Perhaps their withdrawal had altered the upper boundary of under-achievement so that many of the so called under-achievers in this study would not have been labelled as such.

6. The investigation could be widened to include such things as parents' opinions of the need for schooling, students' opinions of the importance of schooling, popularity of the various groups, types of friends, composition of the two middle quartiles, etc. An attempt could be made to find a more accurate measure of personality than the present measure.

7. The use of the Brown Holtzman Survey of Study Habits could be extended so as to give results applicable to Alberta students.

8. The study could be widened to assess achievement in more or all subjects; and/or could measure achievement over a number of years.

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Brown—Holtzman

Survey of Study Habits and Attitudes

DIRECTIONS

The purpose of this survey is to furnish an inventory of study habits and attitudes to serve as a foundation for self-improvement. If taken seriously, this inventory can help you obtain a better understanding of how to study properly. If you will honestly and thoughtfully mark all of the statements on the pages that follow, you will be able to learn many of your study faults. The value of this survey to you will be in direct proportion to the care with which you mark each statement. Since your answers will be treated with the strictest confidence, feel free to answer all questions frankly.

You will mark your answers on a separate answer sheet. Make no marks on this booklet. There are 75 statements in this questionnaire. For each statement a five-point scale is provided for indicating whether you rarely, sometimes, frequently, generally, or almost always do or feel as the statement suggests. You are to rate yourself on each statement by marking the space on your answer sheet that represents your answer choice. Thus, for example, you would mark space **R** on your answer sheet if you *rarely* follow the procedure described or if you feel that the statement is *rarely* true for you. In marking your answers, be sure that the number of the statement agrees with the number on the answer sheet. Make sure that your marks are heavy and black. Make no stray marks on the answer sheet and erase completely any mark that you wish to change.

To aid you in answering this questionnaire, the terms have been defined on a percentage basis as follows:

R—RARELY means from 0 to 15 per cent of the time.

S—SOMETIMES means from 16 to 35 per cent of the time.

F—FREQUENTLY means from 36 to 65 per cent of the time.

G—GENERALLY means from 66 to 85 per cent of the time.

A—ALMOST ALWAYS means from 86 to 100 per cent of the time.

Remember, you are asked to rate yourself, not in accordance with what you think you *should* do or feel, or as you think *others* might do or feel, but as you yourself are in the habit of doing and feeling. When you cannot answer a statement on the basis of actual experience, mark the statement according to what you would be most likely to do if the situation should arise.

There are no "right" or "wrong" answers to these statements, and there is no time limit for this questionnaire. Work as rapidly as you can without being careless, and do not spend too much time on any one statement. Please do not omit any of the statements.

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The Psychological Corporation
New York, New York

R—RARELY

S—SOMETIMES

F—FREQUENTLY

G—GENERALLY

A—ALMOST ALWAYS

1. I feel that teachers do not understand the student's problems.
2. My dislike for a certain teacher causes me to neglect my school work.
3. I feel that I would study harder if I were given more freedom to choose courses that I like.
4. Whether I like a course or not, I still work hard to make a good grade.
5. When my assigned homework is extra long or unusually difficult, I become discouraged and either quit in disgust or skip hurriedly through the assignment, studying only the easier parts of the lesson.
6. In preparing reports, themes, term papers, etc., I make certain that I clearly understand what is wanted before I begin work.
7. Difficulty in expressing myself in writing slows me down on reports, themes, examinations, and other work to be turned in.
8. My teachers criticize my written reports as being hastily written or poorly organized.
9. I feel that teachers allow their personal like or dislike for a student to influence their grading unduly.
10. I lose interest in my studies after the first few days or weeks.
11. I memorize grammatical rules, definitions of technical terms, formulas, etc., without really understanding them.
12. I give special attention to neatness on themes, reports, and other work to be turned in.
13. I take it easy and let my assignments collect for the first two or three weeks of a new semester.
14. I hesitate to ask the teacher for further explanation of an assignment that is not clear to me.
15. Lack of interest in my school work makes it difficult for me to keep my attention focused on assigned reading.
16. Unless I really like a course, I believe in doing only enough to get a passing grade.
17. I get nervous and confused when taking an examination and fail to answer questions to the best of my ability.
18. I have trouble with the mechanics of English composition.
19. When I get behind in my school work for some unavoidable reason, I make up back assignments without prompting from the teacher.
20. I feel confused and undecided as to what my goal in life should be.
21. Some of my courses are so uninteresting that I have to "force" myself to do the assignments.
22. When I am under pressure, my work is inferior in quality.
23. Daydreaming about dates, future plans, etc., distracts my attention from my lesson while I am studying.
24. I believe that having a good time and getting one's full share of fun out of life is just as important as studying.
25. Even though an assignment is dull and boring, I stick to it until it is completed.
26. In taking reading notes, I tend to take down material which later turns out to be unimportant.
27. In taking class notes, I try to copy down the teacher's exact words as closely as possible.
28. I keep all the notes for each subject together, carefully arranging them in some logical order.
29. When I am having difficulty with my school work, I try to talk over the trouble with the teacher.
30. I feel that my grades are a fairly accurate reflection of my ability.
31. I feel that it is not worth the time, money, and effort one must expend to get a college education.
32. Difficulty in assembling ideas with order and clearness within a brief amount of time results in my doing poorly on examinations.
33. Some of my classes are so boring that I spend the class period drawing pictures, writing letters, or daydreaming instead of listening to the teacher.
34. I lay aside returned examinations, reports, and homework assignments without bothering to correct errors noted by the instructor.
35. I keep my place of study business-like and cleared of unnecessary or distracting items such as pictures, letters, mementos, etc.
36. Telephone calls, people coming in and out of my room, "bull-sessions" with my roommate, etc., interrupt me while I am trying to study.
37. It takes a long time for me to get warmed up to the task of studying.

R—RARELY

S—SOMETIMES

F—FREQUENTLY

G—GENERALLY

A—ALMOST ALWAYS

8. I am unable to concentrate well because of periods of restlessness, moodiness, or "having the blues."
9. I put off writing themes, reports, term papers, etc., until the last minute.
10. I feel that I am taking courses that are of little practical value to me.
11. When I sit down to study I find myself too tired, bored, or sleepy to study efficiently.
12. I strive to develop a sincere interest in every course I take.
13. The prestige of having a college education provides my main motive for going to college.
14. I think that maybe I should drop out of school and get a job.
15. I carefully study the figures, graphs, and tables in a reading assignment.
16. Prolonged reading or study gives me a headache.
17. After reading several pages of an assignment, I am unable to recall what I have just read.
18. I cut classes whenever there is something I'd rather do or whenever I need to cram for a test.
19. I waste too much time "chewing the fat," reading magazines, listening to the radio, going to the movies, etc., for the good of my studies.
20. My studying is done in a random, unplanned manner and is impelled mostly by the demands of approaching classes.
21. "Extracurricular activities" — dating, clubs, athletics, fraternity and sorority activities, etc. — cause me to get behind in my school work.
22. I utilize the vacant hours between classes for studying so as to reduce the evening's work.
23. Problems outside of school — financial difficulties, being in love, conflict with parents, etc. — cause me to neglect my school work.
24. I am on time with written assignments.
25. I have difficulty in picking out the important points of a reading assignment — points that are later asked on examinations.
26. When in doubt about the proper form for a written report, I refer to an approved model to provide a pattern to follow.
27. I like to have the radio playing while I'm preparing my homework.
28. When reading a long assignment, I stop periodically and mentally review the main facts and theories that have been presented.
29. I seem to accomplish very little in relation to the amount of time I spend studying.
30. I prefer to sit in the back of the classroom.
31. With me, studying is a hit-or-miss proposition depending on the mood I'm in.
32. I study three or more hours per day outside of class.
33. Before each study period I set up a goal as to how much material I will cover.
34. I can concentrate on a reading assignment for only a short while before the words become a meaningless jumble.
35. I am interrupted by distracting noises while I am studying.
36. I copy the diagrams, drawings, tables, and other illustrations that the instructor puts on the blackboard.
37. I keep my assignments up to date by doing my work regularly from day to day.
38. I prefer to study my lessons alone rather than with others.
39. I lose points on true-false or multiple-choice examinations because I change my original answer only to discover later that I was right the first time.
40. When preparing for an examination I arrange facts to be learned in some logical order — order of importance, order of presentation in class or textbook, order of time in history, etc.
41. I am careless of spelling and in the mechanics of English composition when answering examination questions.
42. Although I work until the last possible minute, I am unable to finish examinations within the allotted time.
43. If time is available, I take a few minutes to check over my answers before turning in my examination paper.
44. When test papers or written assignments are returned, I find that my grade was lowered by careless mistakes.
45. I think that questionnaires such as this are foolish and are of little or no help to anyone.

General Instructions:

- 1) Do not write answers in this booklet.
- 2) Use answer sheet provided, using a clearly marked X over the letter you consider correct. Blot out answers you wish to change.
- 3) Hand in your answer booklet separately.
- 4) Hand in your paragraph (labelled FINISHED WORK) and your rough work (labelled rough work) along with your answer sheet.
- 5) On each sheet write neatly (a) your own name in full and (b) the name of the teacher giving instruction in the subject.
- 6) Check page numbers to be certain that no pages are missing from this booklet.

SECTION I -- THE PARAGRAPHRead the following selection:

Here, then, in England -- the stage setting for the great play of literature which will hold your attention for many months to come. Scenery on a stage serves a purpose, of course it helps you to get into the mood of the play. But it is less important than the play itself; similarly, this short trip you have taken to Great Britain is secondary to the literature you will read. Keep in mind that we read this literature not because it is about England, but because it is the literature of our past in our own language. It contains ideas handed down through the centuries which have influenced the way our country has developed. These ideas have affected the course of your own personal life already.

- Then is a transitional word which (a) shows time (b) cites examples (c) shows change of viewpoint (d) indicates emphasis
- Of course is a transitional word which (a) shows time (b) cites examples (c) shows change of viewpoint (d) indicates emphasis
- But is a transitional word which (a) shows time (b) cites examples (c) shows change of viewpoint (d) indicates emphasis
- It is is a transitional word which (a) shows time (b) cites examples (c) shows change of viewpoint (d) indicates emphasis
- Idea is a transitional word which (a) shows time (b) cites examples (c) shows change of viewpoint (d) indicates emphasis
- This paragraph illustrates development of a paragraph by (a) giving examples (b) using reasoning (c) using contrasts (d) giving details (e) none of these
- The best title for this selection is (a) British Scenes and Sophistry (b) The Play's the Thing (c) Tales and Thoughts from Abroad (d) Literary Lapses.

- If you were to divide this paragraph into two smaller paragraphs, you would logically begin paragraph two at the beginning of sentence (a) 1 (b) 2 (c) 3 (d) 4 (e) 5
- There are three types of sentences used in building paragraphs. They are loose, periodic and balanced sentences. The periodic sentence withholds its meaning until the end of the sentence. The loose sentence, in contrast, reveals the principal thought at once. The balance sentence has two parts which are similar in form. The selection we are analyzing mainly employs (a) loose (b) periodic (c) balanced sentences.
- The type of sentence (which you have chosen in question 9) mainly used in this selection is used to (a) maintain suspense (b) save the writer labour and effort (c) reveal the thought immediately and therefore not tire the reader (d) gain clearness and force.
- Indications are that this selection was taken from (a) a textbook (b) a travel pamphlet (c) an essay (d) an editorial (e) a physical description.
- The clue word of keynote of this selection is (a) England (b) play (c) stage-setting (d) literature (e) attention.
- The topic sentence of this selection (a) serves as a precis (b) violates the principle of unity (c) violates the principle of indentation (d) makes clear to the reader the writer's organization (e) restates all of the title.
- A clinching or summary sentence often restates tersely and vigorously the point of the paragraph. The clinching sentence in this paragraph is (a) 1 (b) 2 (c) 3 (d) 4 (e) 5. (N.B.-- only complete sentences considered.)
- The fundamental image of this paragraph is taken from (a) geography (b) biography (c) drama (d) literature (e) none of these.

Read the following selection

(1) The third man remained obstinately silent under all the strokes from the potted cord. (2) He was very different in aspect from his fellow-prisoners. (3) They were young and hardy and, in the scant clothing which the avarice of their captors had left them looked like vulgar, sturdy mendicants. (4) But he had passed the boundary of old age, and could hardly be less than four or five and sixty. (5) His beard, which had grown long in neglect, and the hair which fell thick and straight round in baldness, was nearly white. (6) His thick-set figure was still firm and bright, though emaciated, and seemed to express energy in spite of age--an expression that was partly carried out in the dark eyes and dark eyebrows which had a strongly isolated intensity of color in the midst of his yellows, bloodless, deep-wrinkled face. (7) And yet there was something fitful in the eyes, which contradicted the occasional flash of energy; after looking round with quick fierceness at windows and faces, they fell again with a lost and wondering look. (8) But his lips were motionless, and he held his hand resolutely down.

In the writing of a well constructed paragraph, the writer must give attention to the connections between statements--if his work is to be coherent. One writer states the means of showing connections between statements as:

- a) "Continuing the same subject from sentence to sentence in the same words, in synonyms, or by means of pronouns;
- b) "Using some words of the first sentence, perhaps the object, as the subject of the second or near the beginning of the second;
- c) "Writing a pronoun to refer to a word in the preceding sentence;
- d) "Showing a thought relationship (cause or effect, reason, illustration....) directly by a conjunction or adverb (but, and however...) or by suggestion;
- e) "Using parallel structure of the sentences".

- 6. Between sentences (1) and (2) the means is
- 7. Between sentences (2) and (3) the means is
- 8. Between sentences (3) and (4) the means is
- 9. Between sentences (4) and (5) the means is
- 10. Between sentences (6) and (7) the means is
- 11. Between sentences (7) and (8) the means is

- 2. The topic sentence of this paragraph is (a) first (b) last (c) implied (d) in the centre of the paragraph.
- 3. The climax of the paragraph occurs in sentence (a) 1 (b) 3 (c) 5 (d) 7 (e) 8.
- 4. The force of this paragraph is gained by (a) indefinite reference (b) vivid adjectives (c) concrete nouns (d) exact adjectives (e) concrete nouns and exact adjectives.
- 5. This paragraph does not show (a) singleness of impression (b) mental point of view (c) a fundamental image (d) a stationary point of view (e) practical description.
- 6. This paragraph is dependent upon a sense of (a) sight (b) hearing (c) smell (d) taste (e) touch.

Read the following selections:

- a) Reading detective stories in bed. I find this delightful at home, and even more delightful when I am away from home, a lost man. The fuss of the day is done with; you are snugly installed in bed, in a little lighted place of your own; and now to make the mind as cozy as the body.
- b) He embodied and expressed France. As much as any simple being, miraculously magnified, can ever be a nation, he was France. Fancy paints nations in symbolic animals-- the British lion, the American eagle..The Gallic cock. But the old tiger, with his quaint stylish cap, his white mustache and burning eyes, would make a truer mascot for France than any barnyard fowl.
- c) When I warned them that Britain would fight on alone whatever they did, the generals told their Prime Minister and has divided cabinet: "In three weeks England will have her neck wrung like a chicken." Some chicken! Some neck!
- d) Yes, but we have not grasped it yet, the full substance of it, in our hands, nor glimpsed its size and shape. We have not yet felt the full pulse of its heart, the flex of its muscle, the pattern of its mind. For we are young my brothers, and full of doubt, and we have listened too long to timid men. But now our time is come and we are ready.

7. Which paragraph illustrates emphasis gained by repetition and space?
8. Which paragraph illustrates emphasis gained by putting important ideas at its beginning?
9. Which paragraph illustrates emphasis gained by putting important ideas at its end?
10. Which paragraph illustrates emphasis gained by using transitional devices and repetition?
1. These four paragraphs all show (a) development by illustration (b) practical description (c) a physical viewpoint (d) force and clarity (e) an implied topic sentence.
2. Which paragraph is not limited to a dominant mood?
3. Which paragraph somewhat illustrates a moving point of view?
4. Which paragraph least illustrates variety in sentence structure?
5. Which paragraph shows most variety in sentence beginning?
6. Which paragraph shows development by example or illustration?
7. In which paragraph does the summary sentence best restate the topic sentence?
8. The error found in paragraph (a) is (a) confusion of persons in personal pronouns (b) lack of unity (c) lack of coherence (d) indefinite reference.

Examples: Read and consider these examples carefully.

- a) the envious way
- b) the wind was a torrent of darkness
- c) blazing a trail over a sea of darkness
- d) the wind was like a torrent of darkness
- e) the wind was a depressing as a torrent of darkness
9. A simile expressing a particular comparison is found in example---
10. A simile expressing a general comparison is found in example---
1. A metaphor is found in example---
2. A mixed metaphor is found in example---
3. A personification is found in example---

Read the following selections:

a) Hearing the terrific barking of dogs, I went to the door. I gazed upon a scene of magnificent beauty--enormous ice-blocks coursing down the river, swirling in swift-frothing eddies. And, sitting on a huge ice-cake, hurtling by in mid-stream, was a bob-cat with a frantic pack of huskies in hot pursuit along the river bank. As though the poor beast had not trouble enough.

- b) I recall trolling for bass in another small Ontario lake on a chilly evening late in October. The sun set in a tumultuous blaze of crimson that faded to deep violet. The sky was perfectly clear at the moment of the sun's going down, but half an hour later a mist arose, thick as a London fog, so that I had to grope my way through it with some difficulty to the landing-stage. The stillness was intense, broken by no sound save the working of the oars in the rowlocks and the hiss of water from their blades. Suddenly the silence was rent, quite close to me by the mad laugh of a loon. My heart missed a beat and I nearly went over board.
- c) You have but to fit the bottom board into the notches; to add a tiny mattress and a pillow; furnish sheets, blankets and a quilt; on a half-looped at the head to stretch the awning which shields young eyes from too strong a light; and, let him look who will, you may be sure that little lad within will sleep there soundly with closed fists.
- d) With her big knife the goodwife traces a cross on the golden loaf, the crisp crust yields with a shower of flakes, and the great slices lean temptingly towards her. A little cube of farm butter with that slight almond flavour puts the finishing touch to the satisfaction of my habitant stomach.
- e) Look from the window as you go. The city is far behind now and right and left of you there are two farms with elms and near them and with tall windmills beside the barns that you can still see in the gathering dusk. There is a dull red light from the windows of the farmstead. It must be comfortable there after the roar and clatter of the city, and only think of the still quiet of it.
4. Which paragraph best illustrates presentation of detail from the less striking to the more striking?
 5. Which paragraph best illustrates presentation of detail from bottom to top?
 6. Which paragraph, except for its first sentence (statement) is dependent upon the sense of sight?
 7. Which paragraph is dependent upon both sight and sound?
 8. Which paragraph, except for the last sentence, is dependent upon sight?
 9. Which paragraph appeals most to a sense of touch?
 10. Which paragraph appeals most to a sense of taste?
 11. Which paragraph best illustrates the use of vivid verbs and verbal adjectives?
 12. Which paragraph most economically illustrates the use of concrete nouns?
 13. Which paragraph contains a simile?
 14. Which paragraph best illustrates a moving point of view?
 15. In which paragraph is the impression of swiftness given by the use of short, terse and concise sentences?

6. The paragraph which best builds up a mood of suspense is --
7. Which paragraph contains only one sentence?
8. These paragraphs might be practical descriptions except that (a) they reveal the writer's feelings (b) they utilize a strong sensory appeal (c) they are more narrative than illustrative (d) they have no point of view.
9. Which paragraph contains a mixed metaphor?
0. Which paragraph contains the best example of personification?
1. Which of the following would not be appropriate for social correspondence?
(a) unlined white paper (b) envelopes matching the above paper (c) postal cards (d) green ink (e) use of the typewriter

2. 384 Park Lane,
Calgary, Alberta,
March 15, 1957.

The above inside address is an example of:

- (a) indented open punctuation (b) indented closed punctuation (c) block open punctuation (d) block closed punctuation (e) none of these.
3. In informal notes, the inside address may be placed:
(a) top, centre of page (b) top, left (c) bottom, left, (d) bottom, right (e) none of these.
4. In addresses which of the following should not be abbreviated?
(a) names of cities (b) the word building (c) names of provinces (d) names of months (e) names of directions (e.g. East).
5. Which is correct in the heading of a social letter?
(a) March 15 1957 (b) 3-15-57 (c) March 15th, 1957 (d) March 15, 1957 (e) none of these)
6. If a city is zonec, the zone number should follow:
(a) the street number (b) the name of the city (c) the name of the province or state (d) the date of the month (e) the year
7. Which of the following salutations is most formal?
(a) Dear Mary, (b) Dear Miss Smith, (c) Dearest Mary, (d) Mear dear Mary (e) My dear Miss Smith.
8. In the body of the letter, it is inexcusable to:
(a) write neatly and legibly (b) avoid crowding the page (c) avoid writing in the margins (d) leave lots (e) erase errors in typing.
9. Which complimentary close is punctuated and capitalized correctly:
(a) Yours Sincerely (b) Sincerely, yours, (c) Sincerely yours (d) Yours sincerely, (e) Sincerely yours.

0. Which signature is incorrect for a social letter?
 (a) (Miss) Margaret Smith (b) Margaret (c) M. Smith (d) Marge (e) Margaret Smith
1. Single sheet letter paper should be folded and placed in the envelope as follows:
 (a) Folded once, open edges facing outward. (b) folded once, open edges in
 (c) Folded twice, open edges out. (d) Folded twice, open edges in. (e) folded
 three times, open edges out.
2. To ensure return of the letter in case of error, the return address should
 be placed:
 (a) in the upper left hand corner of the front of the envelope (b) inside the
 back flap (c) in the lower left hand corner of the front of the envelope
 (d) in the upper right hand corner of the letter (e) after the signature of
 of the letter.
3. Which of the following would be deemed the correct addressing of an envelope
 by post office authorities?
 (a) Miss March Smith,
 384 Park Lane,
 Calgary, Alberta.
 (b) Miss Mary Smith,
 384 Park Lane, Calgary,
 Alberta.
- c) Miss Mary Smith,
 384 Park Lane,
 Calgary,
 Alberta.
 Miss Mary Smith
 384 Park Lane,
 Calgary, Alberta.
 Miss Mary Smith,
 384 Park Lane,
 Calgary,
 Alta.
4. If you are inviting an out-of-town friend to spend the week end in your home,
 which fact will be of least use in the informal letter of invitation?
 (a) time of arrival (b) your recent activities (c) suggested transportation
 (d) special plans that might require special clothing (e) time of departure
5. Which statement is not true concerning a letter of social introduction?
 It should be--
 (a) Written on social stationery (b) Placed in an unsealed envelope (c)
 Given to the person who is to be introduced (d) placed in an envelope stamped
 by the writer (e) placed in an envelope on which is written the name of the
 person who is to receive the letter.

SECTION III -- IMPROVING YOUR READING

6. Which of the following is least helpful in the reading skill known as skimming?
 (a) knowledge of topic sentences (b) knowledge of reading speed (c) recognition
 of boldface type (d) knowledge of outlining (e) recognition of italics
7. Skimming is useful in studying. Which of the following is not a study use
 in which it can serve?
 (a) obtaining a general idea of the topic (b) noting the organization of the
 material (c) deciding if a book is applicable (d) decreasing your sub-
 vocalizing (e) reviewing for an examination.
8. Which of the following is least helpful in increasing your reading speed?
 (a) increasing your eye span (b) avoiding regressions (c) increasing your
 vocabulary (d) decreasing your sub-vocalizing (e) learning the preferred
 spelling.

Directions: Read the following and answer the questions below:

We have all wondered in reading books of history where the writers found all the information which they seem to have collected in such large quantities. The explanation is not a simple one, but a moment's thought will supply part of it at least. Men, wherever they have made their homes, have always left behind them some traces or records of how they lived and what they did. These records are of very many kinds. Sometimes they are in writing on stone, or paper, or even on clay as in the case of the clay tablets from ancient cities like Babylon. But many of them are of other kinds -- buildings in which men lived, or forts which they defended; articles which they used from day to day, such as weapons, implements, utensils, or clothing; stories or songs which they passed on from one generation to another. All of these things and many others, wherever they have been preserved, tell us something about the people from whom they came. The historian must be a real detective in his own way for he must take all the bits of evidence which he can find and must piece them together to arrive at a true story.

9. The one word to which it refers in the second sentence above is: (a) part (b) thought (c) moment (d) simple (e) explanation.
- 10.- This passage is taken from: (a) an introduction to a detective story (b) a geography textbook (c) a social studies textbook (d) an editorial in a newspaper or magazine (e) a movie review.
1. Which of the following statements best expresses the main idea of the above paragraph? (a) All these different records tell us something about the people from whom they came. (b) Historians gather their information from many different kinds of records left by people of the past. (c) The historian's skill depends on his ability to piece together many kinds of records. (d) The traces of records that men have left of how they lived and what they did are of many different kinds. (e) Writings on stone or clay last longer than those on paper.
2. Which of the following is not mentioned in the paragraph as a clue to the people of the past? (a) preserved foods (b) writings on stone, paper or clay (c) buildings (d) weapons and clothing (e) stories or songs.

Again, you have landed on the beach of a large lake, your day's travel is over, your dishes washed. Soon the stars begin to come out, and it is not long before the sky is filled with thousands of them, so large and so close that you think of climbing a tree and reaching for them. Again there is that queer silence, broken only by the crackle of the fire. A mist begins to rise in the north looking like a bank of clouds, faintly white against the dark blue sky. Gradually little shafts of colored lights shoot from the mist. The shafts move from side to side, and gradually lengthen until they reach directly about you. They are no longer little. They are many colored, delicately tinted, beams from powerful search-lights operated from some super-dreadnaught, always moving, always changing color. You feel as though you must say something, and you break the silence by speaking to your companion on a low voice. He replies in the same tone, and you continue the conversation far into the night, revelling in the sense of companionship found in that vast strange, silent wilderness.

3. The campers have travelled: (a) on foot; (b) by canoe (c) on horseback (d) by bicycle (e) some other means.

84. The two campers use a low voice because:
 (a) they are tired from a long day's travelling; (b) they do not wish to disturb other campers; (c) they are awed by the beauty and silence of the night; (d) they are afraid of revealing their whereabouts to the enemy; (e) they are afraid of wild animals.
85. What is the natural phenomenon that the campers witness?
 (a) the misty fog; (b) stars; (c) rain; (d) volcano erupting; (e) northern lights.
86. What does the writer appreciate most?
 (a) the queer silence, broken only the crackle of the fire; (b) the beauty of the stars; (c) the feeling of companionship; (d) the outdoor meals; (e) the beauty of the lakeshore.

The \$64,000 Question

Televisions's \$64,000 Question may succeed where businessmen and economics writers have failed: It may bring home to the low and middle bracket income-tax payer in the United States, the confiscatory tax rates in higher brackets.

Through this program, millions of viewers are becoming aware of income-tax rates which make it reasonable for a contestant to quit at the \$32,000 plateau rather than go on to the final \$64,000 question. A monthly letter of the First National City Bank of New York spells out the situation.

An unmarried contestant with an income of \$4000 can take home \$16,600 if he wins the \$32,000 question. The tax collector takes \$15,400. But if he goes on, he risks his \$16,600 to take home only \$8708 more. For a net win of \$64,000 the bank points out, the gross prize would have to be \$448,711, of which the government would take \$384,711.

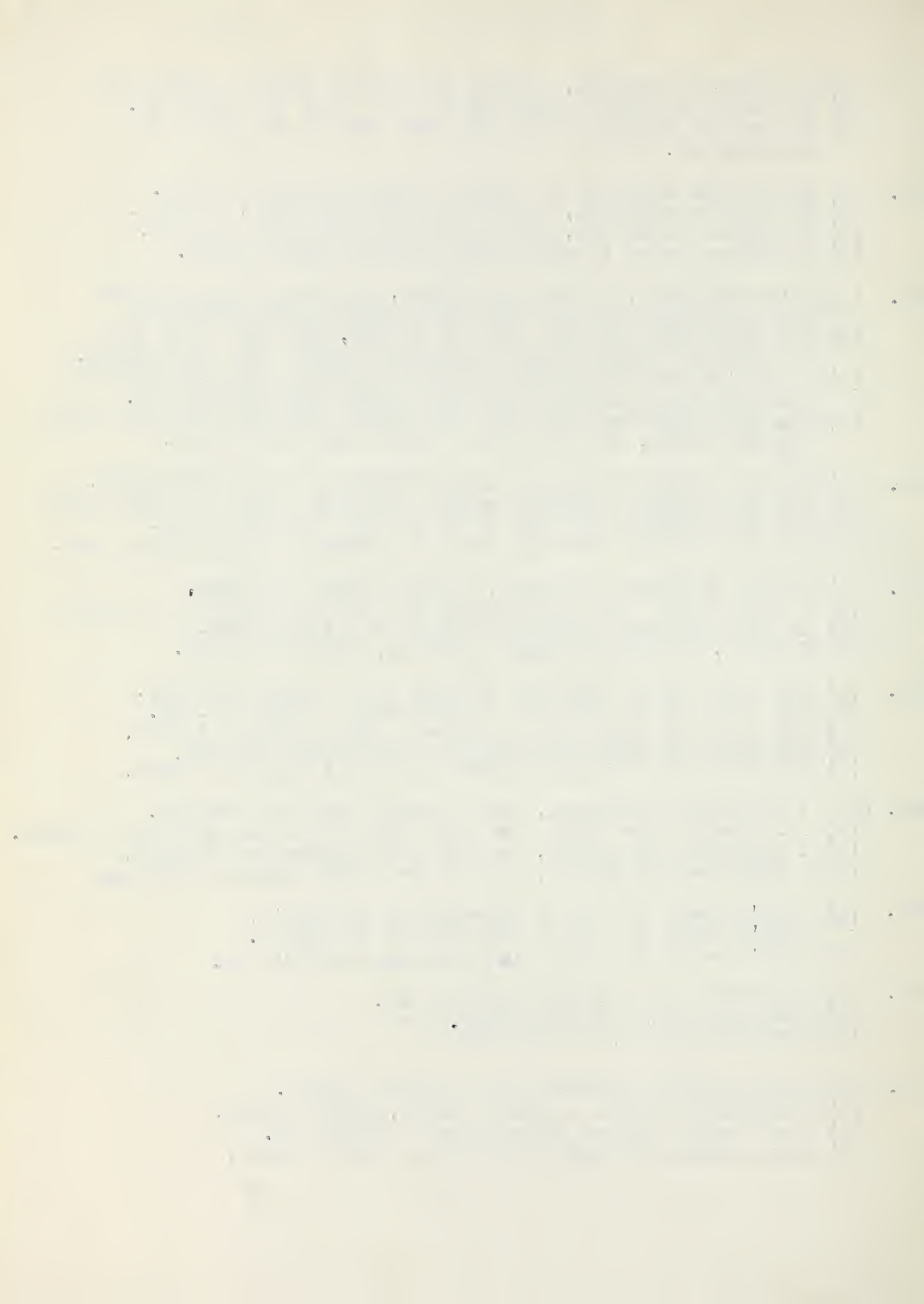
87. "Confiscatory" in the second sentence above means:
 (a) seizing without allowance for complaint (b) trustworthy (c) paid as a sacred rite (d) extra or higher than usual (e) payment for entertainment.
88. The above selection is mainly discussing
 (a) marriage (b) the T.V. Program \$64,000 Question. (c) unfair tax rates (d) banking (e) economics.
89. The selection suggests that contestants:
 (a) try for \$448,711 and thus net \$64,000 (b) stop at the \$32,000 plateau (c) risk the \$16,600 he has won to win \$8708 more (d) get married to get into a different income tax bracket (e) do not try to evade income taxes.
90. If an unmarried contestant with an income of \$4000 wins the \$32,000 question, he must pay an income tax on his winnings of:
 (a) \$4,000 (b) \$16,600 (c) \$8,708 (d) \$15,400 (e) more than any of the four suggested amounts.

Keeping in mind the function of a sentence, select the best version in each of the following groups of expressions. Mark this on the answer sheet with a cross.

91. (a) You know what I mean; exactly what I have told you on many occasions.
(b) You know what I mean. Exactly what I have told you on many occasions.
(c) You know what I mean exactly what I have told you on many occasions.
92. (a) She worked industriously preparing her assignment in French.
(b) She worked. She worked industriously. She was preparing her assignment in French.
(c) She worked, and she worked industriously because she was preparing her assignment in French.
(d) She worked industriously because she was preparing her assignment in French.
93. (a) He came today, and his name is "Pug", and he is a little boy, and my children like him, and they were glad to see him.
(b) Little "Pug" came today. Because my children liked the boy, They were glad to see him.
(c) The little boy named "Pug" came today, and because my children liked him, they were glad to see him.
94. (a) The former was active; the latter was indolent.
(b) The former was active, however, the latter was indolent.
(c) The former was active, the latter was indolent.
95. (a) Because this don't belong here, put it where you were sitting.
(b) This doesn't belong here; put it where you were sitting.
(c) This don't belong here; put it where you was sitting.
96. (a) Each of the courses was interesting and inspiring.
(b) Each of the courses were interesting, and inspiring.
(c) Each of the courses were interesting and inspiring.
97. (a) In these damp shady places was found several rare specimens.
(b) In this damp shady place was found several rare specimens.
(c) In this damp shady place were found several rare specimens.
98. (a) Either English (or history) is required.
(b) Either English or history are required.
(c) Either English or history is required.
99. (a) We expect never to recover from this experience.
(b) We never expect to recover from this experience.
(c) We expect to never recover from this experience.
100. (a) Last night Pete Smith's car skidded and injured him on that curve we've often spoken of.
(b) Last night Pete Smith's car skidded and injured him on that curve about which we've often spoken.

- (c) Last night Pete Smith was injured when his car skidded on that curve about which we have often spoken.
- (d) Last night Pete Smith's car skidded, and he was injured. It was on that curve about which we have often spoken.
101. (a) Mr. Johnson saw before him the form of a lion growling ferociously.
- (b) Growling ferociously, Mr. Johnson saw the form of a lion before him.
- (c) Mr. Johnson saw the form of a lion before him growling ferociously.
- (d) Mr. Johnson saw growling ferociously the form of a lion before him.
102. (a) After failing for three successive weeks, Professor Holden agreed that he was disappointed with Thompson's marks.
- (b) After Thompson's failing for three successive weeks, Professor Holden agreed that he was disappointed with the student's marks.
- (c) After his failing for three successive weeks, Professor Holden agreed that he was disappointed with Thompson's marks.
103. (a) She likes to sing, to dance, and to act.
- (b) She likes to sing, to dance, and she enjoys taking part in plays.
- (c) She likes to sing as well as dancing or to act.
- (d) She likes singing, dancing and to act.
104. (a) Our holidays are either spent at home or at camp.
- (b) Our holidays not only are spent at home but also at camp.
- (c) Our holidays are spent either at home or at camp.
- (d) Not only are our holidays spent at home but also at camp.
105. (a) The cold house was damp and I managed to enjoy it.
- (b) The cold house was damp, and I managed to enjoy it.
- (c) The house was cold and damp, and I managed to enjoy it.
- (d) The house was cold and damp, but I managed to enjoy it.
106. (a) The marines landed at ten o'clock; and the looting ceased.
- (b) The marines landed at ten o'clock, but the looting ceased.
- (c) The marines landed at ten o'clock; eventually the looting ceased.
- (d) The Marines landed at ten o'clock, then the looting ceased.
107. (a) We erected the tent and immediately began to build a fire.
- (b) Having erected the tent; we immediately began to build a fire.
- (c) Erecting the tent, we immediately began to build a fire.
- (d) Having erected the tent we immediately began to build a fire.
108. (a) He stopped abruptly, although there was no danger of his striking me.

- (b) He stopped abruptly, because he did not want to strike me.
(c) He stops abruptly because he did not want to strike me.
(d) He stopped abruptly although there was no danger of his striking me.
109. (a) My science notebook in which I left my notes is lost.
(b) My science notebook, in which I left my notes, is lost.
(c) My science notebook, that I left my notes in, is lost.
(d) I left my notes in my science notebook which I lost.
110. (a) You think that, as you are clever, you will "get by"; but you are wrong, because life will detect your weaknesses.
(b) You think that because you are clever, you will "get by"; but you are wrong because life will detect your weaknesses.
(c) You think that inasmuch as you are clever, you will "get by"; but you are wrong for life will detect your weaknesses.
(d) You think that because you are clever, you will "get by"; but you are wrong, for life will detect your weaknesses.
111. (a) The man lurched forward, as he seemed to be in great pain.
(b) The man lurched forward, being, it seems to be, in great pain.
(c) The man lurched forward, as if he were in great pain.
(d) The man lurched forward, since he seemed to be in great pain.
112. (a) If you continue to scream, I shall leave the room.
(b) I shall leave the room, unless you do not continue to scream.
(c) If you continue to scream I shall leave the room.
(d) I shall, if you continue to scream, leave the room.
113. (a) The coat was so torn and useless that I threw it away.
(b) The coat was so torn and so useless; I threw it away.
(c) The coat was torn and so useless, that I threw it away.
(d) The coat was torn and useless, and I threw it away.
(e) The coat was torn and useless so that I threw it away.
114. (a) I repeated the phrase, for he could grasp my thought.
(b) I repeated the phrase in order that he should grasp my thought.
(c) I repeated the phrase, lest he should grasp my thought.
(d) I repeated the phrase, so that he should grasp my thought.
115. (a) John's essay is not as interesting as Mary's.
(b) John's essay is not so interesting as Mary's.
(c) John's essay is not as interesting as Mary's is.
116. (a) Wherever you go I shall follow you.
(b) Where you go, I shall follow.
(c) Wherever you go, I shall follow.
117. (a) Allen worked faithfully for a small salary.
(b) Faithfully and for a small salary, Allen worked.
(c) For a small salary, Allen worked faithfully.
(d) Allen worked faithfully but for a small salary.



18. (a) I shall gladly do what you ask because I know that this plan means a great deal to you.
(b) I know that this plan means a great deal to you and I will gladly do what you ask.
(c) Because I know that this plan means a great deal to you I shall gladly do what you ask.
(d) Because I know that this plan means a great deal to you, I will gladly do what you ask.
19. (a) In this work you need a strong character, a good personality, and the ability to write well.
(b) In this work you need a good personality, the ability to write well and a strong character.
(c) In this work you need the ability to write well, a strong character and a good personality.
(d) In this work you need the ability to write well, a good personality and a strong character.
20. (a) The pipes froze due to the cold.
(b) The pipes froze because of the cold.
(c) Due to the cold, the pipes froze.
(d) The pipes froze, caused by the cold.

SECTION V

- A. Replace the underlined words or expressions with words of a similar meaning from the list below each sentence.
21. This house was willed to me by my grandfather.
(a) bequeather (b) encumbered (c) impoverished (d) seethed (e) dunned
22. Customs officers have to examine closely all incoming parcels.
(a) pillage (b) repine (c) scrutinize (d) salvage (e) affront.
23. We went to tea at her house particularly to meet her house-guests.
(a) reluctantly (b) eventually (c) stealthily (d) expressly (e) finally.
24. A brilliant assemblage of athletic stars competed in the Olympic Games.
(a) galaxy (b) proletariat (c) embryo (d) populace (e) populous
25. The society will become poor if you spend the funds so freely.
(a) blemished (b) blamed (c) affronted (d) impoverished (e) encumbered
26. A person who lives very long in the tropics is inclined to become lacking in energy.
(a) exotic (b) sallow (c) languid (d) bland (e) resplendent.
27. I am too busy to waste time on such trifling pastimes.
(a) ominous (b) bland (c) affable (d) frivolous (e) tangible.
28. The dictator feared an uprising by the the labouring classes.
(a) proletariat (b) aristocracy (c) bourgeoisie (d) kazoo (e) coalition.
29. The Coast Guard cutter managed to save from wreckage the batter tramp steamer.
(a) fret (b) salvage (c) pillage (d) seethe (e) appraise.

30. We were so hampered by our heavy packs that we could scarcely walk.
(a) encumbered (b) made languid (c) impoverished (d) bereaved (e) convulsed
- ... Pick the word which gives the correct meaning for each of the following sentences.
31. When the engine hit the stationary car, the force of the ((a) contract (b) bathos (c) impact (d) pathos) sent it rolling along the tracks.
32. What makes you so ((a) confident (b) confidential (c) averse (d) perverse) that our team will head the league?
33. Nothing will ((a) condole (b) condone (c) deduce (d) induce) me to spend another summer in the city.
34. Although I am fond of Jean I cannot ((a) condole (b) condone (c) deduce (d) induce) her foolish acts.
35. There is no ((a) momentary (b) monentous (c) appreciable (d) appreciative) difference between my Latin and French marks.
36. Dickens describes conditions in the slums with genuine ((a) impact (b) bathos (c) compact (d) pathos)
37. The ((a) moral (b) motif (c) motive (d) morale) of the crime was obviously robbery.
38. I am not ((a) averse (b) perverse (c) confident (d) confidential) to talking my holidays in July, but I really prefer August.
39. When you are driving a car, even a ((a) appreciable (b) momentary (c) appreciative (d) momentous) lack of attention is dangerous.
40. The captain reported that the ((a) moral (b) motif (c) motive (d) morale) of his men was excellent.
- ... Pick the word or expression in each group which has a similar meaning to the first word.
41. approbation: (a) appearance (b) inquiry (c) proof (d) approval
42. artifice: (a) treasure (b) device (c) signal (d) movement
43. caustic: (a) talkative (b) serious (c) sarcastic (d) costly.
44. eccentric: (a) odd (b) excitable (c) extreme (d) doubtful
45. solace: (a) joy (b) sorrow (c) loneliness (d) comfort
46. impediment: (a) illness (b) meaning (c) improvement (d) hindrance
47. blithe: (a) smooth (b) thin (c) handsome (d) gay
48. excerpt: (a) message (b) book (c) extract (d) letter.
49. fervent: (a) eager (b) fearful (c) fragile (d) land
50. malignant: (a) not well (b) unlighted (c) helpful (d) harmful.

SECTION VI -- CREATIVE WRITING

Write either a letter or paragraph using one of the topics below:
(approximately 100 words)

Suggestions:

- 1) Plan or outline your work---use letter form for the letter; compose a suitable title for the paragraph.
- 2) Write your paragraph or letter in rough.
- 3) Check your rough work for form, spelling, grammar, punctuation, sentence structure and general effectiveness.
- 4) Revise your work.
- 5) Rewrite your finished letter or paragraph.

Letter Topics

1. A letter of appreciation after returning from several weeks at the lake cottage of a relative.
2. A letter of congratulation to a cousin who has been chosen to represent his school in a public-speaking contest.

Paragraph Topics (topic sentences given)

1. The stranger, waiting at the corner, knew at last what people meant by the voice of the city.
2. All in all (name) was an unusual individual.
3. If I had fifty dollars, I know exactly how I would spend it.
4. Fridays are so confusing.



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